VOL. XVIII NEW YORK—THURSDAY, MARCH 5, 1908—CHICAGO NO. 10

THE AUTOMOBILE

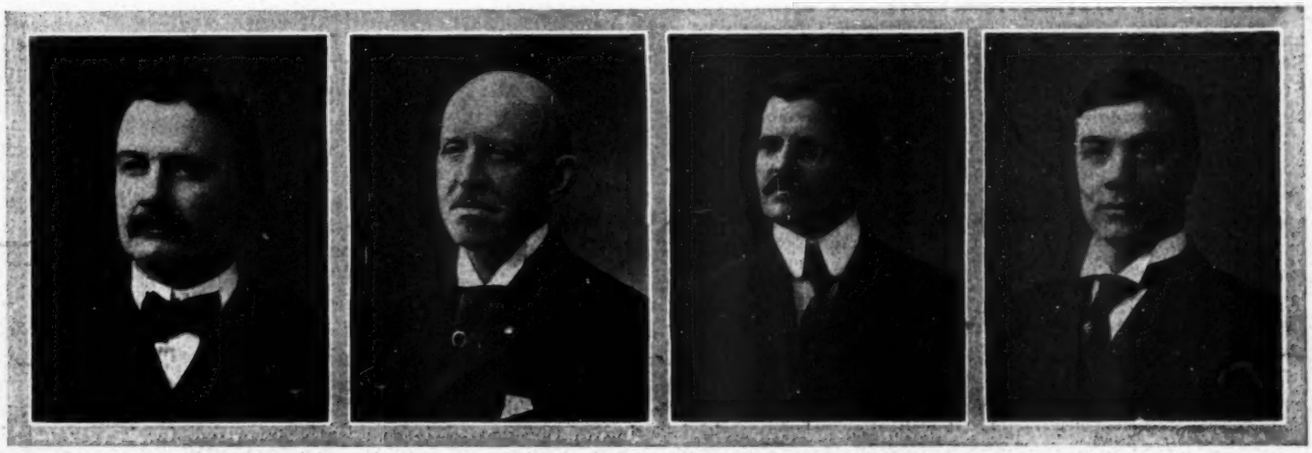
The Boston Show

BOSTON, March 5.—Boston's annual automobile show, the event to which New England flocks to get its ideas as to the latest developments in motoring, will open Saturday night in Mechanics Building. It will be the sixth show of the Boston Automobile Dealers' Association, and there is every reason to believe that it will maintain the high reputation that has been won among the trade by its predecessors, Always a large show, the exhibition of 1908 is to be on a grander scale than ever before, for it will include the whole of New England's greatest exhibition building. For some years past it has been the custom to set off the basement of the building for the motor boat manufacturers. This year, however, the motor boat men held a separate show, which makes available much additional space for the automobile exhibits. And all this extra space is needed, for the demand has been greater than in any previous year.

With more space at their disposal than formerly, Manager Chester I. Campbell and the directors of the Dealers' Association have been able to carry out several novel ideas. One of these is the establishment of a fully equipped repair shop in a section of the basement. In this department will be installed the latest machinery for automobile repairing, and it is intended to have the machinery in operation. This section, it is expected, will be of special interest to owners who take care of their own machines, and to chauffeurs. Another feature of the basement will be the large amount of space allotted to commercial vehicles. A number of firms which build commercial vehicles have taken space, and it is anticipated that the display will be more comprehensive than at any previous show in Boston.

In the matter of decorations the Boston show, the pioneer in the uniform decorative idea, will keep up to past performances. Manager Campbell's New England apple orchard of a year ago was admittedly among the most novel show decorations ever presented, and he has put together for this year something equally attractive, though with less local significance. The central idea is Japanese in effect, and for days past a large corp of decorators has been at work transforming the huge, bare halls into the semblance of a tea garden of the far East.

In Grand Hall the back of the stage will be covered by a wide drop, upon which has been painted a typical Japanese scene, with snow-capped mountains in the background and with the Japanese flag, dragons and other symbolic figures for the top and sides. Great quantities of wistaria blooms will be used for the stage front. To cover the great beams of Grand hall a canopy of white bunting will be used, while in the very center will be suspended a chrysanthemum of



John H. MacAlman, President. George H. Lowe, Vice-Pres. Chester I. Campbell, Secretary. F. A. Hinchcliffe, Treasurer.

OFFICERS OF THE BOSTON AUTOMOBILE DEALERS' ASSOCIATION, CONDUCTING THE BOSTON SHOW.

gigantic size, from which will run streamers to the sides and corners. In the center of the hall, where last year the band stand rested in the branches of an apple tree, has been built a magnificent fountain and basin with water spouting from eight jets. In the basin are to be placed gold fishes, and several massive palm trees will add to the picturesque effect of this central feature.

Instead of railings and fences, privet hedges are to be used to mark the dividing lines between the exhibition spaces, and at the ends of the hedges, along the main aisles will be placed bay trees. The sacred gates of Japan, which herald to the visitor the approach to a temple, have been erected over the principal aisles, and from them will droop wistaria blooms in profusion. The sides of the balcony are to be treated harmoniously with privet, bay trees and wistaria. For illuminating purposes thousands of electric lamps and Japanese lanterns will be employed.

In Machinery hall a similar system of decoration will be followed, the aisles being bridged with the sacred gates and great quantities of wistaria blooms being interwoven through a latticework. In the balconies, where are to be located the accessories departments, the general decorative scheme will be continued, and in the basement, also, there will be appropriate decorations.

To carry out further the Japanese effect of the show, Manager Campbell has employed many Japanese men and boys to act as pages and attendants, and these will be dressed in their native costume. The outside of the building will be adorned to some extent so as to give the visitor an idea of what he may expect after passing the turnstiles at the doors.

No lines between "licensed" and "unlicensed" cars are drawn at the Boston show, and for that reason it has been in the past the most complete in the country. This year practically every manufacturer of any consequence has taken space, and many of the New York importers, both those who have Boston agents or branches and those who have not, are to exhibit. That the attendance will be large goes without saying. The Boston automobile show is the one event of the year, and the only one that fills the whole of Mechanics building with humanity. In addition to the great display of cars and their accessories, Manager Campbell has planned to entertain the great host of people with orchestral music in all the larger halls, and he has likewise made arrangements for the conduct of an excellent restaurant.

The interest that is being demonstrated in the show, both by the public and by the manufacturers and dealers, is the best justification the directors of the Dealers' Association could have of their attitude taken a year ago in opposition to the early show fever that swept the country. When it was announced just after the 1907 show that the next Boston show would be in March of 1908, there was much adverse criticism. Some of the members of the association believed that with the New York shows in the fall of 1907 the Boston dealers would have little or nothing to sell by March and that the value of the show would be lost. They brought much influence to bear to have the show date advanced to January, but Manager Campbell and the directors resisted this influence. As matters have turned out, March is the best possible time for the great New England motor exhibition. The dealers have plenty of cars to sell and they are all looking forward to the coming week to bring about a great boom in the retail business. Where a year ago the officers of the association were being roundly condemned for not keeping up with the procession, now there is nothing but praise for their farsightedness in not being carried away by the early show idea.

MASSACHUSETTS HOLDS AN AUTOMOBILE IS NOT A CARRIAGE

BOSTON, March 2.—An important decision, affecting broadly the rights of automobilists on the highways of Massachusetts has just been handed down by the full bench of the Supreme Court, the highest judicial tribunal in the State. It is in effect that an automobile is not a carriage within the meaning of the statute and that towns are not required to keep their highways in condition for automobile travel, providing they maintain them in a condition reasonably safe and convenient for travel generally. The court further holds that an automobilist who has not secured a State license to operate cannot recover from a town for an accident on a highway, even if defective for general travel.

The decision was made in the case of William C. Doherty against the town of Ayer. Mr. Doherty was driving his automobile on a town way known as Sandy Pond road on September 21, 1905. At that time the Lowell & Fitchburg Street Railway Company was preparing to lay tracks in the street and the automobile sank from eight to ten inches in the sand. In an effort to extricate it, the chain was broken and the machine sustained other damages. Mr. Doherty brought suit against the town, and in the Superior Court was awarded a verdict of $100. The town took exception to the instructions of the judge presiding at the trial that an automobile was a carriage within the meaning of the revised laws, and that it was the duty of the defendant under the statute to keep its roads reasonably safe and convenient for automobiles, so that they might be protected.

The question raised was a novel one and the court in its decision holds that the town is not liable to one who is using an automobile and who is injured in a highway that would not be defective to travelers generally and cause them injury. The town is not bound to keep its roads safe for automobiles. The court calls attention to the fact that in England even railway coaches are called carriages, but nevertheless such vehicles are not included in any statute which provides that a town shall keep its roads in a reasonably safe condition for carriages. An automobile, as is any vehicle propelled by a motor or engine, is more a machine than a carriage. In the present instance the court notes that the automobile referred to is frequently spoken of as a machine. In many places in this State, especially in unfrequented roads, a driver or an automobile owner would encounter difficulties as great or greater than those presented to Doherty.

A point in question as to whether Doherty was licensed and registered is taken up by the court, and although it is ruled, as far as the evidence goes, he was duly licensed and registered, the court holds that if he had not been he would not be a traveler on the highways in a legal sense. In such a case an automobile owner would have no remedy for damages sustained in a defective road.

The statute governing the liability of towns for accidents on their highways was passed by the Massachusetts Legislature in 1786. It provides that towns shall keep their ways safe for "travelers with their horses, teams and carriages."

Commenting upon the verdict, Francis Hurtubis, Jr., formerely counsel of the Massachusetts Auto Association, says:

"While I do not care to give the impression that I believe the Supreme Court has erred in handing down the decision, if it has held that an automobile is not a carriage in the meaning of the statute, I am greatly surprised, for it seems as if we had taken a step backward."

BOSTON TO PRESENT A REPRESENTATIVE SHOW

IN early days, when the cities outside of those entitled to hold shows of national importance first acquired the automobile show habit, Boston was among the very first to get in line. The affair was then purely a dealers' gathering, as are still many of the shows held in cities that started at the same time as the Hub. In the meantime, Boston has far outstripped its competitors—so far, indeed, that in speaking of the shows of the season, one never omits mention of the downeasters whose successful efforts in this direction have given them a strong hold on the distinction of being one of the "Big Three" shows of the year. Hence the importance of the Bay State's capital city as a show center.

When the early show idea took the trade organizations of the industry by storm last Fall, and the two strongest factors of the manufacturing community "fell for it," to put things in the vernacular, it was expected that Boston would follow suit as a matter of course, and when it was announced that the usual March dates would be adhered to there was more or less surprise expressed, though "It's only a dealers' show" served to explain away a large part of this. But Boston is vastly more than a dealers' show, and the wisdom of sticking to what experience had proved to be the best course, does not require much explanation at the present writing.

It took many of the western manufacturers some time to get up their courage sufficiently to bring their exhibits on to New York for the annual line-up, and not a few cars that were staged in the Coliseum year after year never saw Broadway until 1906. Now they have reached the Back Bay and they will be there in force at the opening next Saturday night, is evident upon reviewing the accompanying list of exhibitors of complete cars. Add to this the fact that Boston is the home of not a few of the accessories and specialties that are known the country over, while many others first see the light in neighboring cities and the generous showing of exhibitors in this field speaks for itself, though accessory exhibits are not confined to home products by any means, as will be noted from the presence of well-known western makers in the long list of exhibitors of small wares.

THE CAR EXHIBITS AND THE FIRMS WHO SHOW THEM

ACME—Boston Motor Co., 43 Columbus Ave., Boston.
ALLEN-KINGSTON—Allen-Kingston Motor Co., 887 Boylston St., Boston.
AMERICAN—W. A. Frederick Co., Motor Mart, Boston.
AMERICAN MERCEDES—H. C. Stratton, 741 Boylston St., Boston.
ATLAS—Harry Fosdick Co., Motor Mart, Boston.
APPERSON—Fred S. Smith, 36 Columbus Ave., Boston.
AUTOCAR—Fred S. Smith, 36 Columbus Ave., Boston.
BABCOCK ELECTRIC—Curtis-Hawkins Co., 218 Eliot St., Boston.
BAKER ELECTRIC—Harry Fosdick Co., Motor Mart, Boston.
BAILEY ELECTRIC—S. R. Bailey & Co., Amesbury, Mass.
BERLIET—Park Square Auto Co., 43 Columbus Ave., Boston.
BROUHOT—K. A. Skinner, 179 Clarendon St., Boston.
BRUSH—South End Car Co., 24 East Concord St., Boston.
CADILLAC—A. T. Fuller, Motor Mart, Boston.
CHADWICK—Curtis-Hawkins Co., 218 Eliot St., Boston.
CLARK—Edward C. Clark, 272 Freeport St., Boston.
CLEVELAND—Butler Motor Car Co., 12 Harcourt St., Boston.
COLUMBIA—Columbia Motor Vehicle Co., 74 Stanhope St., Boston.
COLUMBUS ELEC.—Algonquin Motor Car Co., 97 Massachusetts Ave., Boston.
CORBIN—Corbin Mfg. Co., 87 Church St., Boston.
CROWN BUGGY—Crown Motor Car Co., Motor Mart, Boston.
DE DION—K. A. Skinner, 179 Clarendon St., Boston.
DE LUXE—H. C. Stratton, 741 Boylston St., Boston.
DRAGON—Dragon Motor Co., 119 Massachusetts Ave., Boston.
ELMORE—F. R. Parker & Co., 288 Columbus Ave., Boston.
FIAT—Fiat Co., Boylston St., Boston.
FORD—Ford Motor Co., 147 Columbus Ave., Boston.
FRANKLIN—Franklin Automobile Co., 671 Boylston St., Boston.
FRAYER-MILLER—D. P. Nichols & Co., 118 W. Brookline St., Boston.
GLIDE—Crown Motor Car Co., Motor Mart, Boston.
GROUT—Curtis-Hawkins Co., 218 Eliot St., Boston.
HOTCHKISS—Morgan B. Kent, 998 Boylston St., Boston.
IMPERIAL—Geo. H. Lowe, 27 State St., Boston.
KISSEL KAR—H. C. Stratton, 741 Boylston St., Boston.
KNOX—Reed-Underwood Co., 222 Columbus Ave., Boston.
LAMBERT—Chas. A. Eaton, 67 Pembroke St., Boston.
LANE—Lane Sales Co., 514 West 145th St., New York.
LEWIS—R. C. Lewis, Muncie, Ind.
LOCOMOBILE—Locomobile Co. of America, 400 Newbury St., Boston.
LOZIER—H. C. & C. D. Castle, 893 Boylston St., Boston.
MARION—W. A. Frederick Co., Motor Mart, Boston.
MARMON—F. E. Wing, Motor Mart, Boston.
MATHESON—Matheson Co., of Boston, Quincy Sq., Cambridge Mass.
MAXWELL—Maxwell-Briscoe-Boston Co., 121 Massachusetts Ave., Boston.
MERCEDES—Allen-Kingston Motor Co., 887 Boylston St., Boston.
MITCHELL—W. M. Jenkins Co., 286 Columbus Ave., Boston.
MORA—Morrison-Price Co., 93 Massachusetts Ave., Boston.
NATIONAL—Linscott Motor Co., 163 Columbus Ave., Boston.
NORTHERN—Northern Motor Car Co., Detroit, Mich.
OAKLAND—Oakland Motor Car Co., Pontiac, Mich.
OVERLAND—W. A. Frederick Co., Motor Mart, Boston.
OLDSMOBILE—Algonquin Motor Car Co., 97 Massachusetts Ave., Boston.
PACKARD—A. T. Fuller, Motor Mart, Boston.
PEERLESS—Peerless Motor Car Co., 178 Columbus Ave., Boston.
PENNSYLVANIA—F. E. Randell Co., 66 Stanhope St., Boston.
PIERCE ARROW—J. W. Maguire Co., 745 Boylston St., Boston.
PIERCE RACINE—Butler Motor Car Co., 12 Harcourt St., Boston.
POPE-HARTFORD—Dodge Motor Vehicle Co., 25 Irvington St., Boston.
POPE-TOLEDO—Dodge Motor Vehicle Co., 25 Irvington St., Boston.
POPE-TRIBUNE—Dodge Motor Vehicle Co., 25 Irvington St., Boston.
POPE-WAVERLY—Dodge Motor Vehicle Co., 25 Irvington St., Boston.
P. & S.—Palmer & Singer Co., 1620 Broadway, New York.
PREMIER—Premier Boston Depot, 1008 Boylston St., Boston.
PULLMAN—F. E. Randall Co., 66 Stanhope St., Boston.
RAINIER—Morrison-Price Co., 93 Massachusetts Ave., Boston.
RAMBLER—Thos. B. Jeffery Co., 145 Columbus Ave., Boston.
RAPID—Butler Motor Car Co., 12 Harcourt St., Boston.
RENAULT—Renault Frères Selling Branch, New York.
REO—Linscott Motor Co., 163 Columbus Ave., Boston.
ROYAL TOURIST—Geo. J. Dunham, 188 Columbus Ave., Boston.
SCHACK—Ferd. F. French, Sudbury St., Boston.
SHAWMUT—Shawmut Motor Co., Stoneham, Mass.
SIMPLEX—Palmer & Singer Co., 1620 Broadway, New York.
SPRINGFIELD—Mills-Kennedy Co., 733 Boylston St., Boston.
SPRINGFIELD—Harry Fosdick Co., Motor Mart, Boston.
STANLEY—Stanley Motor Carriage Co., Newton, Mass.
STEARNS—Morgan B. Kent, 998 Boylston St., Boston.
STEVENS-DURYEA—J. W. Bowman Co., 811 Boylston St., Boston.
STILSON—F. E. Randall Co., 66 Stanhope St., Boston.
STODDARD-DAYTON—Park Square Auto Co., 43 Columbus Ave., Boston.
THOMAS—Whitte-Gilmore Co., 907 Boylston St., Boston.
VIKING—A. R. Bangs, 25 Eliot St., Cambridge.
WALTER—Fred G. Smith, 36 Columbus Ave., Boston.
WAYNE—Morrison-Price Co., 93 Massachusetts Ave., Boston.
WALTHAM-ORIENT—Waltham Mfg. Co., Waltham, Mass.
WELCH—Mills-Kennedy Co., 733 Boylston St., Boston.
WHITE—The White Company, 320 Newbury St., Boston.
WINTON—Winton Motor Carriage Co., 1 Stanhope St., Boston.

MOTORCYCLES.

CROUCH—Crouch Motor Co., Stoneham, Mass.
F. N.—Ovington Motor Co., 2234 Broadway, New York.
INDIAN—Hendee Manufacturing Co., Springfield, Mass.
LIGHT—Light Mfg. & Foundry Co., Pottstown, Pa.
MARSH—American Motor Co., Brockton, Mass.
MERKEL—Merkel Motor Co., Milwaukee, Wis.
RELIANCE—Reliance Motor Cycle Co., Oswego, N. Y.
R. S.—Reading Standard Co., Reading, Pa.
THOR—Aurora Automatic Machine Co., Aurora, Ill.

THE PARTS AND ACCESSORY PEOPLE WHO HAVE EXHIBITS

PNEUMATIC AND SOLID TIRES.

Automobile Utilities Company, 88 Broad St., Boston, Mass.
Ajax-Grieb Company, 1776 Broadway, New York.
Ball Bearing Tire Company, 159 Avon St., Providence, R. I.
Columbia Vehicle Tire & Top Co., 97 Haverhill St., Boston, Mass.
Commonwealth Rubber Company, Lowell St., Reading, Mass.
Diamond Rubber Company, Akron, O.
Dow Tire Company, 104 W. Forty-second St., New York.
Empire Tire Company, Trenton, N. J.
Firestone Tire & Rubber Company, Akron, O.
Fisk Rubber Company, Chicopee Falls, Mass.
G & J Tire Company, Indianapolis, Ind.
B. F. Goodrich Company, Akron, O.
Goodyear Tire & Rubber Company, Akron, O.
Hartford Rubber Works Company, Hartford, Conn.
Leather Tire Goods Company, Newton Upper Falls, Mass.
Michelin Tire Company, Milltown, N. J.
Morgan & Wright, Detroit, Mich.
Pennsylvania Rubber Company, Jeannette, Pa.
St. John Rubber Company, 88 Broad St., Boston, Mass.
Voorhees Rubber Company, 40 Bostwick Ave., Jersey City, N. J.
Zeglan Bullet-Proof Cloth Company, 520 W. Division St., Chicago, Ill.

BATTERIES, MAGNETOS, IGNITION.

Anderson Spark Plug Company, 100 Boylston St., Boston, Mass.
Auto Igniter Company, 1947 Broadway, New York.
Bemus Company, T. Alton, Inc., 385 Atlantic Ave., Boston, Mass.
Champion Company, Albert, 36 Whittier St., Boston, Mass.
Connecticut Telephone & Elec. Company, Meriden, Conn.
Duplex Coil Company, 5 Park Square, Boston, Mass.
Eastern Carbon Works, Jersey City, N. J.
Electric Storage Battery Company, Philadelphia, Pa.
Heinze Electric Company, Lowell, Mass.
Monitor Distributor Company, 49 Federal St., Boston, Mass.
National Carbon Company, Cleveland, O.
Never-Miss Spark Plug Company, Lansing, Mich.
Pittsfield Spark Coil Company, Dalton, Mass.
Stackpole Battery Company, St. Mary's, Pa.
Westchester Appliance Company, Yonkers, N. Y.
Witherbee Igniter Company, 1876 Broadway, New York.

LAMPS AND HEADLIGHTS

Atwood Manufacturing Company, Amesbury, Mass.
Connell, W. J., 36 Columbus Ave., Boston, Mass.
Gray & Davis, Amesbury, Mass.

ACETYLENE GAS APPLIANCES, TANKS.

Acetyvone Company, 38 Park Row, New York.
Eco Manufacturing Company, 53 State St., Boston, Mass.
Prest-O-Lite Company, 607 Boylston St., Boston, Mass.

LUBRICANTS, LUBRICATING APPLIANCES, TANKS.

Bowser & Company, S. F., Ft. Wayne, Ind.
Columbia Lubricants Company, 116 Broad St., New York.
Eagle Oil & Supply Company, 104 Broad St., Boston, Mass.
Dover Stamping & Manufacturing Company, Cambridge, Mass.
Dixon Crucible Company, Joseph, Jersey City, N. J.
Harris Oil Company, A. W., Providence, R. I.
Haws, George A., 73 Pine St., New York.
Gilbert & Barker Mfg. Company, 51 Union St., Boston, Mass.
Kellon, Charles F., 128 Arch St., Philadelphia, Pa.
N. Y. & N. J. Lubricants Company, 14 Church St., New York.
Randall-Faichney Company, 251 Causeway St., Boston, Mass.
Robinson's Sons & Co., W. C., 44 Commercial Wharf, Boston, Mass.
Underhay Oil Company, 73 Battermarch St., Boston, Mass.
Vacuum Oil Company, Rochester, N. Y.

SHOCK ABSORBERS.

Ciglia Shock Preventer Company, 176 W. 72d St., New York.
Gabriel Horn Mfg. Company, 976 Hamilton Ave., Cleveland, O.
Hartford Suspension Company, 67 Vestry St., New York.
Kilgore Manufacturing Company, Oldtown, Me.

SPEED INDICATING INSTRUMENTS.

Hoffecker Company, 222 Eliot St., Boston, Mass.
Jones Speedometer Company, 76th St. and Broadway, New York.
Jones, William Herbert, 147 Columbus Ave., Boston, Mass.
Motor Car Specialty Company, 112 No. Broad St., Philadelphia, Pa.
Parker Manufacturing Company, Roxbury, Mass.
Smith Manufacturing Company, R. H., Springfield, Mass.
Warner Instrument Company, Beloit, Wis.
Veeder Manufacturing Company, Hartford, Conn.

ACCESSORY AND SUPPLY DEALERS.

Angier Company, 735 Boylston St., Boston, Mass.
Chandler & Farquhar Company, 36 Federal St., Boston, Mass.
Downing, C. J., 54 Warren St., New York.
Gordon Auto Supply Company, 215 Eliot St., Boston, Mass.
Miller, Charles E., 97 Reade St., New York.
Pettingill-Andrews Company, Pearl St., Boston, Mass.
Post & Lester Company, Hartford, Conn.
Proctor Supply Company, 25 Irvington St., Boston, Mass.
Wilkinson & Company, A. J., 180 Washington St., Boston, Mass.

TIRE CASES, APPLIANCES, ETC.

Gilbert Manufacturing Company, New Haven, Conn.
Hopewell Brothers, 42 Osborn St., Cambridge, Mass.
Teel Manufacturing Company, Medford, Mass.

MOTORS, CASTINGS, PARTS, MACHINERY.

American Rotary Motor Company, 208 Devonshire St., Boston, Mass.
Boston Gear Works, Norfolk Downs, Mass.
Coates Clipper Manufacturing Company, Worcester, Mass.
Cramp & Sons Company, Wm., Philadelphia, Pa.
Defiance Chain Company, 148 Federal St., Boston, Mass.
National Auto Accessory Company, 84 State St., Boston, Mass.
New England Motor Company, Lowell, Mass.
Norton Grinding Company, Worcester, Mass.
Vim Motor Company, Sandusky, O.
Whitney Manufacturing Company, Hartford, Conn.

MISCELLANEOUS EXHIBITORS.

Aetna Life Insurance Company, 4 Liberty St., Boston, Mass.
Auto List Publishing Company, 8 Beacon St., Boston, Mass.
Automobile School, Y. M. C. A., Boston, Mass.
Baldwin & Company, Bangor, Me.
Boyd, F. Shirley, 889 Boylston St., Boston, Mass.
Boston Auto Gage Company, 8 Waltham St., Boston, Mass.
Boston Auto Light Company, 924 Pleasant St., Boston, Mass.
Brown Folding Stool Company, 27 Dock Square, Boston, Mass.
Campbell, H. F., 5 Park Square, Boston, Mass.
Century Optical Company, 442 Central Park West, New York.
Colgan Company, J. W., Sudbury Bldg., Boston, Mass.
Chase Company, L. C., 89 Franklin St., Boston, Mass.
Consolidated Optical Mfg. Company, 112 W. 31st St., New York.
Cutter, J. Frank, Cambridge, Mass.
Daniels, W. S., 52 Church St., Boston, Mass.
Draper, J. B., & Company, Brunswick, Me.
Elite Manufacturing Company, Ashland, O.
Fuller & Sullivan, 19 Eliot St., Boston, Mass.
Globe Optical Company, 403 Washington St., Boston, Mass.
Gunn, Arthur S., 218 Tremont St., Boston, Mass.
Hillman Auto Supply Company, 446 Tremont St., Boston, Mass.
Howard Company, F. H., Watertown, Mass.
Leonard Brothers, Waukegan, Ill.
Malden Leather Goods Company, 2 Park Square, Boston, Mass.
Maryland Casualty Company, 84 State St., Boston, Mass.
Melrose Automobile Company, Melrose, Mass.
Massachusetts Auto Company, 52 Church St., Boston, Mass.
Moore-Smith Company, 250 Devonshire St., Boston, Mass.
Morse, Alfred Cutler, Motor Mart, Boston, Mass.
Murray & Company, P. A., Newton, Mass.
National Valgrinock Company, 200 Summer St., Boston, Mass.
N. E. Lighting Company, 169 Congress St., Boston, Mass.
Nolan, William, 541 Tremont St., Boston, Mass.
Nonpareil Brass Company, 283 Dyer St., Providence, R. I.
Non-Exp. Safety Naphtha Container Company, 185 Summer St., Boston, Mass.
Pantasote Company, 11 Broadway, New York.
Robinson, Duncan, 89 State St., Boston, Mass.
Russell, T. F., 22 Lincoln St., Boston, Mass.
Sage's Trunk Depot, 81 Summer St., Boston, Mass.
Salman & Company, John A., 21 Bromfield St., Boston, Mass.
Shove & Gage Company, Inc., Providence, R. I.
Smith Company, W. J., New Haven, Conn.
Solderine Company, 91 Oliver St., Boston, Mass.
Speare, F. P., Y. M. C. A., Boston, Mass.
Stanley, John T., 650 W. 30th St., New York.
Suthergreen, F. S., Manchester, Mass.
Thompson Company, Judson L., Waltham, Mass.
Ward, E. T., 23 Purchase St., Boston, Mass.
West & Dodge, 384 Atlantic Ave., Boston, Mass.
White & Bagley Company, Worcester, Mass.

Experiences of Boston's Pioneer Autoist

BOSTON, March 5.—In the local automobile clubs, when the old-timers get to talking the ancient history of automobiling, it is not uncommon to hear them refer to such and such an event as happening "in the year George Morrill got his first steamer," or "the year George Morrill drove the little De Dion," or "the year George Morrill brought over the big six-cylinder Napier." To the novice this is all Greek, for though he very likely knows George Morrill, Jr., of Norwood (not to know him is a confession of little acquaintance with automobiling in Boston), he very likely is not familiar with the fact that automobiling in Boston began with Mr. Morrill, and that for the past fifteen years he has been one of the most ardent owners and drivers of motor vehicles in this State and in the country at large.

Mr. Morrill is president of the George H. Morrill Company, manufacturers of printing inks, whose large factory is one of the leading industries of Norwood, Mass. He makes his home in the same town, where he has a beautiful estate, including a large mansion, fully stocked stable and a motor house of large proportions. His estate is one of the sights of the town, and his motor house is known far and wide among automobilists for its complete equipment and appointments. While he is an enthusiastic automobilist and has attended many of the motoring events of importance in America and abroad, he has never used his cars with a view of establishing touring or speed records, making use of them largely for the convenience of himself and his family.

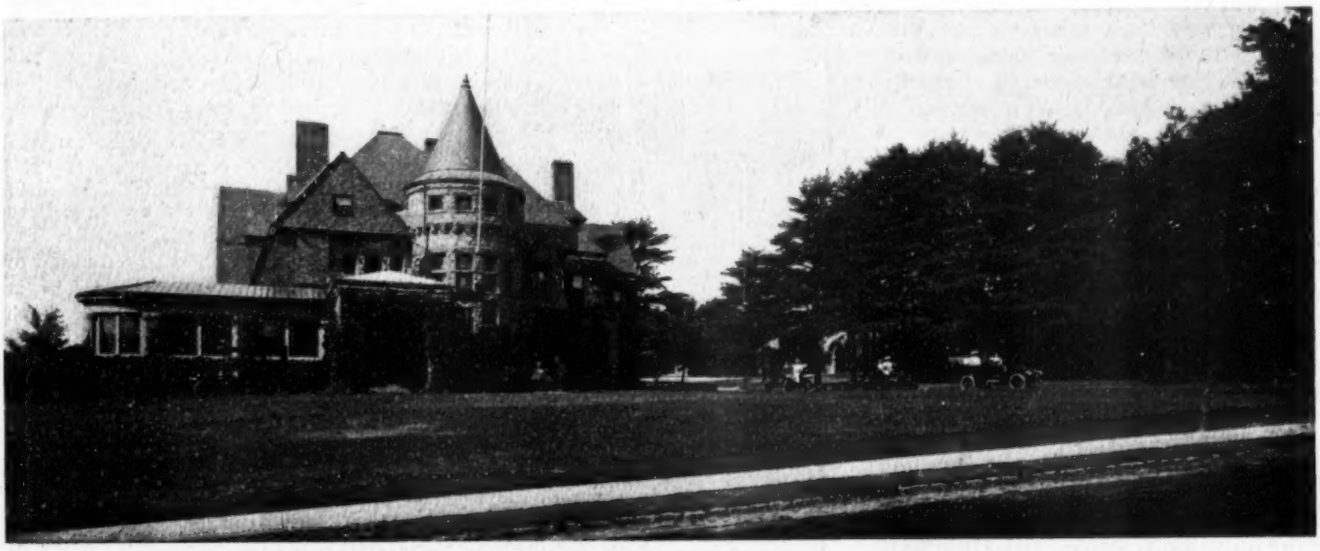
At least three things stand out prominently in Mr. Morrill's career as an automobilist: he owned the first car that was seen on the streets of Boston; he drove the first six-cylinder car seen in this part of the country; and he has owned probably as many automobiles as any other man in Massachusetts, having been the possessor of twenty-one, including the four which now occupy his garage. His present equipment consists of a Model K Winton limousine, a Model M Winton touring car, a 20-horsepower Napier runabout, and a Maxwell runabout, the last largely used by his son. This is rather a small equipment for him, as he has customarily had at least a half dozen cars at a time.

Mr. Morrill began his motoring career in September, 1893, when he became possessor of a single-cylinder runabout made by Charles Duryea, of Springfield, Mass. The car was shipped from Springfield to Boston, and when it made its appearance on the streets the crowds that assembled were so large that it was only with great difficulty that the automobile was driven through the city and to the home of its new owner in Norwood. It was on this occasion that the term "Get a horse" is said to have originated, though other sections make claim to the distinction of having originated this opprobrious ejaculation, formerly the bane of the automobilist, but happily now rapidly falling into disuse. The little machine made its initial trip without serious trouble, and people followed it nearly to the outskirts of the city. Long after that whenever Mr. Morrill was expected along the road crowds gathered at the corners much as they do along the parade route of a circus.

Regrets that He Did Not Save His First Car.

This first machine in Boston was a crude affair, compared with the latest products of the factories. The engine was under the footboard and the transmission was through a countershaft to the rear wheels, the power being transmitted by means of a series of belts. Chains were not then in use. The motor was rated at 10 horsepower, and there were three speeds ahead and one reverse. Speaking of his first experiment in motoring, Mr. Morrill said to THE AUTOMOBILE representative: "I have often wished that I had saved that first car, just to show what a fool a man could be. If I made it go five miles without a stop I thought I was having lots of fun. A little later, when I proposed buying another car, Mrs. Morrill sized up the situation well when she said that with the first machine I was lucky if I got out of the yard, and with the new one I would be lucky if I got back."

The second car owned by Mr. Morrill, also a Duryea, was bought in 1894, and he went over to New York to see it per-



"The Pines," Norwood, Mass., Home of Geo. H. Morrill, Jr., Owner of the First Automobile Driven in Boston.

Mr. Morrill is seated in the touring car on the extreme right of the picture. Behind the touring car is Mr. Morrill's Maxwell, containing his son, and behind that is his Napier runabout, containing Mrs. Morrill. On the left in front of the house is Mr. Morrill's limousine. His motor house is in the rear of the mansion.

form in the John Brisben Walker race from the city hall up to Ardsley and return. The race started, and for ten miles or so Mr. Morrill followed the car with a pair of horses. The longest trip he made with this car was from Norwood to Providence and return, and the journey took two days. Mr. Morrill frequently makes the same trip with one of his present cars in a few hours. At that time he was able to buy gasoline at five cents a gallon, and when the price was raised to eight cents it seemed to him like extortion. There was no need of sirens and other forms of warning, for the machine made noise enough itself to warn everything else out of the way. People were known to have stood beside the road for three hours to watch the contrivance go by. In 1895 Mr. Morrill drove his automobile to the Brockton fair, and it was the first machine that had been seen there. The car was a greater attraction for the fair visitors than the Midway, the prize cattle, or the balloonist.

Mr. Morrill Also Owned a Number of Steam Cars.

After several years' experience with the Duryea gasoline cars, Mr. Morrill turned to steam, which seemed to be in the ascendancy, and his first steamer was a Locomobile of the small runabout type. Then he had in succession five Stanley steamers, and the Stanley brothers always took great pride in keeping Mr. Morrill's cars equipped with the very latest devices and improvements. Thus he had one of the first ball-bearing cross heads and one of the first superheaters. These early steam cars gave good satisfaction compared with the earlier gasoline vehicles, but Mr. Morrill eventually went back to gasoline explosion motors and has used them steadily ever since. At one time he owned two small De Dions, then much in vogue in Boston and vicinity, and at other periods he drove a Rambler, Pierce Arrow, a Stevens-Duryea, and other well-known makes of American gasoline cars.

He has owned five Wintons, and bought the first Winton car sold by Harry Fosdick when he became manager of the Boston branch of the Winton company. That was in 1902. The following year he purchased another Winton, and in 1904 bought a third. His other Wintons are the two which he is now using and which constitute the chief members of his "stud."

It was in 1904 that Mr. Morrill introduced the six-cylinder to Boston. He went abroad in the summer, and while in England with Charles J. Glidden, the world-girdling automobilist, bought of S. F. Edge & Co., Ltd., a six-cylinder Napier. With this car he toured in England, and also drove to the Gordon Bennett race in Germany. He brought the car home in June, 1904, and drove it for several years, using it on his trips to the Florida tournaments in 1905 and 1906. Said Mr. Morrill: "That car cost me in all $12,000, and I sold it last year for $1,900. I am through with foreign cars, and have no use for anything but those made in America. I also do not care for six-cylinders. I believe that if a properly made four-cylinder and a properly made six-cylinder were placed side by side, and a man were asked to tell which was which without seeing them, he would be unable to do so. They talk a great deal about better balance and all that sort of thing, but I don't see it, and I have had experience."

His Hospitality Is Noted and His Garage Is Ideal.

Recently Mr. Morrill had his garage, formerly 35 feet square, enlarged to 35 by 55 feet. It is equipped in the most up-to-date manner with granolithic flooring, turntable, pits, stands, washing space, and the like, and he is about installing electric lights. Everybody who travels the New York road through Norwood knows that in case of emergency he will find all sorts of supplies in the Morrill garage, and Mr. Morrill is the kind of automobilist that believes in helping his brother sportsmen when in distress. His automobiles are always at the disposal of his friends, of whom he has many, and it is not a strange sight in Norwood to see a cavalcade of three or four automobiles filled with people leaving the Morrill estate for a run to some point of interest. Mr. Morrill has kept no account of his mileage, and does not know how many thousand miles he has traveled, but each summer he does much touring, usually making a trip into the mountains, and he keeps his cars going all through the Winter.

S. A. E. TO MEET AT BOSTON, MARCH 10 AND 11

THE first quarterly meeting of the Society of Automobile Engineers for the present year will be held at Boston during the course of the show there. It will be opened on Tuesday evening by the reading of a paper on electrical ignition by J. O. Heinze, at the Massachusetts Institute of Technology. The following morning, at 9:30, the members will rendezvous at the headquarters of the Bay State Automobile Association where a number of cars will be waiting to convey them to Lowell, Mass. Lunch will be served at the Lowell country club, and immediately following this the members will pay a visit of inspection to the laboratory and factory of the Heinze Electrical Company, which is said to be one of the best equipped plants of its kind in the country. Two hours are to be allowed for the 30-mile drive back from Lowell. A dinner will be held at the Bay State Automobile Association, and this will be followed by the reading of papers.

Among the subjects on which papers have been prepared, are "Perfecting Automobile Ignition," by J. O. Heinze; "Design of Automobile Crankshafts," by P. M. Heldt; "A Multiple Unit System as a Solution of the Heavy Goods Transportation Problem," by Joseph A. Anglada; and "Automobile Forgings," by Richard W. Funk. The reading of the papers will be followed by a discussion of the points brought out by the different authors in the course of their papers, and in this, the members of the Bay State Automobile Association have been invited to join.

Mr. Heinze's paper deals with a phase of the subject of electrical ignition on the automobile that has received only too little attention in the past, and his researches and experiments on the subject, which have probably been more extensive and thorough than have ever been undertaken in this country, show in a highly interesting manner just why automobile manufacturers found the maintenance on a car of what appeared to be an insignificant current, such a difficult and vexatious problem to solve. So little had been done in this field hitherto that Mr. Heinze had to devise his own instruments for testing and they are very ingenious.

In his paper, Mr. Heldt briefly sums up what has been learned regarding the design of that most important part of the motor—the crankshaft. He shows why there have been so many failures in the design of this essential, as well as the influence of the method of manufacture on the production of an enduring crankshaft, in addition to which he dwells at some length on the new two-bearing crankshafts for which the adoption of the block type of motor has been responsible. Mr. Anglada has made a close study of the problem of economical heavy goods transportation by means of the multiple unit system of haulage, using a gasoline-electric tractor and self-propelled units controlled from the latter, as well as of the tire problem in connection with this most important automobile development. "Automobile Forgings" is a title that is self-explanatory, but in his paper Mr. Funk confines himself to what he has learned in the actual production of many hundreds of motor crankshafts by different methods of forging and with different materials. It is probable that the summer meeting of the Society will be held in Detroit.

BOSTON as an Automobile Mart

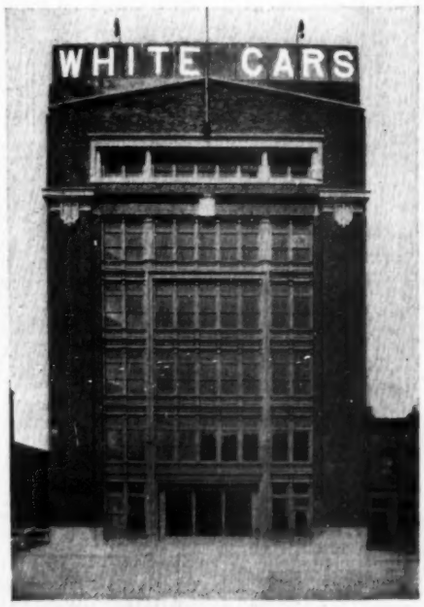
BOSTON, March 5.—Being the mercantile heart of New England, as well as the "Hub of the Universe," it is natural that Boston should early assume an important position in the automobile trade, and to-day there are few cities, if any outside New York and Chicago, which have as large a number of dealers in motor vehicles. When the industry was in its infancy the concerns that first essayed to manufacture on a business basis looked to Boston for encouragement, and some of the first agencies and branches in the country were established here. Keeping pace with the wonderful growth of the industry, the trade in Boston has grown and broadened until from a couple of stores on Boylston street and one or two in the old bicycle section of Columbus avenue, the business has increased until it includes a half hundred well-established concerns, occupying most of the stores on large sections of Columbus avenue, Boylston street and Massachusetts avenue and representing nearly four score different makes of automobiles.

Though the development of the trade in Boston has been extremely rapid, it has been built up on the firm Boston basis of conservatism, and the wisdom of this sort of progress has been amply demonstrated during the past three months or more. While automobile dealers in some other cities have been worrying about the prospects for 1908, the Boston dealers as a rule have been doing a steady business and the number of new concerns that have entered the field indicates that, in the opinion of those closely connected with the trade, the New England field is susceptible of much future development. The number of foreign agencies that have been established is a feature of recent developments.

There is scarcely a car which has gained any recognition whatever that is not on sale in this city, and some of the dealers have built up most profitable businesses handling one line of cars year after year. Such an instance is Alvan T. Fuller, recognized as one of the leaders in the local trade. Years ago Mr. Fuller entered the automobile business. He was only a boy in years and only a few of his intimate friends know now how few years have passed over his head. After handling various cars, Mr. Fuller secured the agency for the Packard, and he has handled it ever since, making it easily one of the most popular automobiles in New England. Mr. Fuller also has handled the Cadillac with success for several years.

Another dealer who has made a success by sticking to one line is J. W. Maguire, the Pierce agent. Mr. Maguire graduated into the automobile business from the bicycle trade, and he obtained the agency for the Pierce a number of years ago. By conscientious attention to his work and through the medium of a first-class car he has built up a large trade in this vicinity. Another veteran of the trade is W. E. Eldridge, of the Stranahan-Eldridge Company, the Buick agents. Mr. Eldridge was once the manager of the Pope branch, and after leaving that employment he formed with Mr. Stranahan the present company. Another old-timer who has graduated from branch management into business for himself is A. E. Morrison, of the Morrison & Price Company, the Rainier and Wayne agents. Mr. Morrison was for many years with the Peerless company, but for the last few years he has been handling different lines of cars.

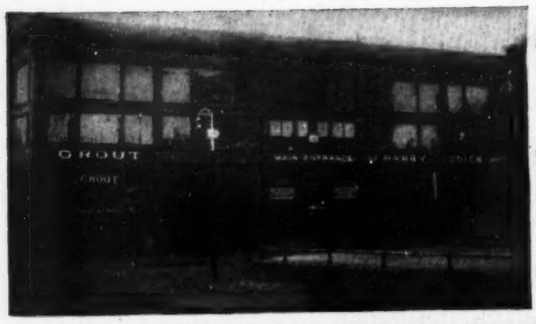
E. A. Gilmore, of the Whitten-Gilmore company, is one of the best-known automobile men in this section of the country. He was long with Thomas B. Jeffery & Co., as a manager of the Boston branch, and in this capacity he became acquainted with the trade throughout the New England territory. With Mr. Whitten, long in the automobile business in Lynn, Mr. Gilmore is now handling the Thomas line. Perhaps no man in Boston has been better known than J. M. Linscott, of the Linscott Motor Company. In the old bicycle days the Linscott road race was a famous event. Mr. Linscott early entered the automobile business and his firm is well known as the agency for the National and the Reo.

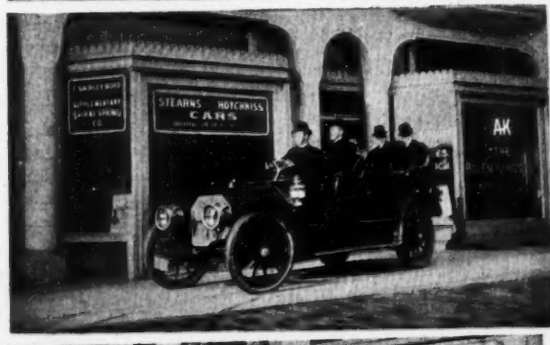


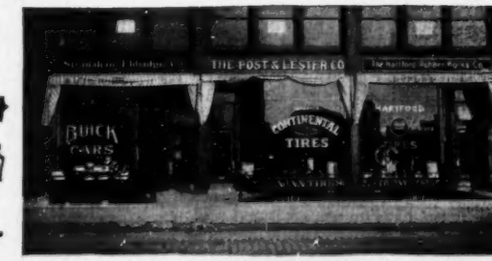
The New White Garage in Boston.

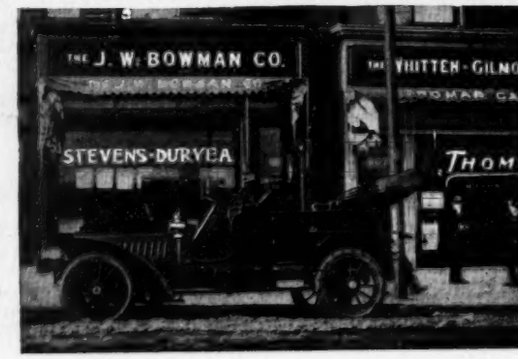
This building, completed by the White Company last fall, is the largest garage building in New England. It is located on Newbury street, near Massachusetts avenue, and opposite the White Boston branch.

Among the branch managers are a number of men who have grown up with the trade in Boston. J. S. Hathaway, who presides over the destinies of the White company, operating two large garages besides a constantly growing sales department, has been connected with the company for many years. F. A. Hinchcliffe, the Winton manager, was in the automobile business in Boston way back when practically the whole product was steam cars. Then he went to New York and from there to Boston several years ago as Winton manager. John L. Snow, the Peerless manager, has worked his way up in the trade from demonstrator to salesman and two or three years ago was appointed branch manager. John H. MacAlman, manager of the Columbia branch, was for years with the Locomobile company in Boston and is one of the leaders in local trade circles. He is president of the Boston Automobile Dealers' Association, which holds the Boston show. F. J. Tyler, the manager of the Maxwell-Briscoe Boston company, entered the automobile trade only a few years ago,









but he has succeeded in making the Maxwell known from one end to the other of his territory. K. M. Blake, the manager of the Locomobile branch, is comparatively a newcomer in Boston, but in the few years he has been here, though laboring under great difficulties, he has established an enviable clientele for the Locomobile.

The foreign cars are represented more strongly in Boston at the present time than ever before. One of the latest branches opened is that of the Fiat Automobile Company, with S. H. Baker, formerly connected with the J. W. Bowman Company, the Stevens-Duryea agents, as manager. Another new foreign car branch is that of the Panhard & Levassor company, with George T. Gould, formerly of New York, as manager. A. C. Morse has lately taken the agency for the Renault, and the Darracq company also has a local agency, while Morgan B. Kent handles the Hotchkiss as well as the Stearns. American-made models of foreign cars are also well represented here. The Park Square Auto station, of which C. F. Whitney is manager, has the agency for the Berliet as well as the Stoddard-Dayton; H. C. Stratton & Co. handle the American Mercedes along with the Car De Luxe and the Kissel Kar, and the George H. Lowe Company has the agency for the American Mors.

One of the older branch houses is that of Thomas B. Jeffery & Co., which has been established on Columbus avenue almost from the beginning of the business. The manager is V. A. Charles, who was promoted a year or more ago after serving as salesman. The Ford company also has a prosperous branch alongside that of the Rambler, and the manager is Charles E. Fay, formerly with the Winton Company in Boston. The Dragon, Franklin and Studebaker companies also maintain branches in Boston.

Among the newer automobile concerns are the Algonquin Motor Car Company, of which A. E. Adams is manager, and which handles the Oldsmobile; W. M. Jenkins & Co., which handles the Mitchell; the Premier Boston depot, with Henry L. Johnson as manager; F. R. Parker, agent for the Elmore, and C. A. Eaton, agent for the Lambert. The Harry Fosdick Company, agent for the Springfield and the Atlas, is a concern of several years standing and has one of the finest show rooms in the city. Other leading dealers include the Custis-Hawkins Company, of the Motor Mart, agent for the Chadwick and the Grout; F. E. Wing Motor Car Company, agent for the Marmon; W. A. Frederick Company, agent for the American and Overland; Crown Motor Car Company., agent for the Glide; Boston Motor Car Company, agent for the Acme; Everett S. Litchfield, agent for the Austin; E. P. Blake Company, agent for the Jackson and the Logan; Fred

S. Smith, agent for the Apperson, Autocar and Walter; George J. Dunham, agent for the Royal Tourist and Corbin; Reed-Underhill Company, the Knox agent; F. E. Randall Company, agent for the Pennsylvania, Pullman and Stilson; Mills-Kennedy Company, agent for the Welch; Allen-Kingston Company, agent for the Allen-Kingston; H. C. & C. D. Castle, the Lozier agent; J. W. Bowman Company, the Stevens-Duryea representative; Roy E. Faye, the Matheson agent; the Dodge Motor Vehicle Company, representing the Pope line, and the Butler Motor Car Company, representing the Cleveland.

A list of the principal Boston dealers and the cars for which they are agents is as follows:

Curtis-Hawkins Co., Motor Mart	CHADWICK, GROUT, BABCOCK.
Harry Fosdick Co., Motor Mart	ATLAS, SPRINGFIELD, BAKER.
A. T. Fuller, Motor Mart	PACKARD, CADILLAC.
F. E. Wing Motor Car Co., Motor Mart	MARMON.
W. A. Frederick Co., Motor Mart	AMERICAN, OVERLAND.
Crown Motor Car Co., Motor Mart	GLIDE.
Boston Motor Car Co., Motor Mart	ACME.
Park Square Auto Station, Motor Mart	BERLIET, STODDARD-DAYTON
Everett S. Litchfield, Motor Mart	AUSTIN.
E. P. Blake Co., 21 Hawkins St	JACKSON, LOGAN.
Fred S. Smith, 36 Columbus Ave	APPERSON, AUTOCAR, WALTER.
T. B. Jeffery & Co., 145 Columbus Ave	RAMBLER.
Ford Motor Co., 147 Columbus Ave	FORD.
Linscott Motor Co., 163 Columbus Ave	NATIONAL, REO.
Peerless Motor Car Co., 178 Columbus Ave	PEERLESS.
George J. Dunham, 189 Columbus Ave	ROYAL TOURIST, CORBIN.
Winton Motor Carriage Co., 1 Stanhope St	WINTON.
Reed-Underhill Co., 222 Columbus Ave	KNOX.
F. E. Randall Co., 245 Columbus Ave	PENNSYLVANIA, PULLMAN, STILSON.
W. M. Jenkins Co., 286 Columbus Ave	MITCHELL.
Columbia Motor Vehicle Co., 74 Stanhope St	COLUMBIA.
Franklin Automobile Co., 671 Boylston St	FRANKLIN.
Mills-Kennedy Co., 733 Boylston St	WELCH.
H. C. Stratton & Co., 741 Boylston St	AM. MERCEDES, DE LUXE, KISSEL KAR.
J. W. Maguire Co., 745 Boylston St	PIERCE.
Allen-Kingston Motor Car Co., 887 Boylston St	ALLEN-KINGSTON.
Fiat Automobile Co., 885 Boylston St	FIAT.
Morgan B. Kent, 889 Boylston St	STEARNS, HOTCHKISS.
H. C. & C. D. Castle, 893 Boylston St	LOZIER.
Panhard & Levassor Co., 901 Boylston St	PANHARD.
Shawmut Motor Car Co., 901 Boylston St	SHAWMUT.
Stranahan-Eldridge Co., 823 Boylston St	BUICK.
Whitten-Gilmore Co., 907 Boylston St	THOMAS.
J. W. Bowman Co., 911 Boylston St	STEVENS-DURYEA.
The White Co., 320 Newbury St	WHITE.
Premier Boston Depot, 1008 Boylston St	PREMIER.
Studebaker Automobile Co., Boylston St	STUDEBAKER.
Maxwell-Briscoe Boston Co., 121 Mass. Ave	MAXWELL.
Dragon Motor Co., 119 Massachusetts Ave	DRAGON.
Locomobile Co. of America, 400 Newbury St	LOCOMOBILE.
Algonquin Motor Car Co., 97 Mass. Ave	OLDSMOBILE, COLUMBUS.
Morrison & Price, 93 Massachusetts Ave	RAINIER, WAYNE.
George H. Lowe Co., 509 Tremont St	AEROCAR.
Roy E. Faye, Quincy Sq., Cambridge	MATHESON.
A. C. Morse, 222 Eliot St	RENAULT.
Coburn-Percival Co., 179 Clarendon St	
Stanley Motor Carriage Co., Newton	STANLEY.
Dodge Motor Vehicle Co., Irvington St	POPE.
Butler Motor Car Co., 12 Harcourt St	CLEVELAND.
F. R. Parker, 288 Columbus Ave	ELMORE.
C. A. Eaton, 22 Concord St	LAMBERT.

MAINE'S SHOW WAS A MOST SUCCESSFUL EXHIBITION

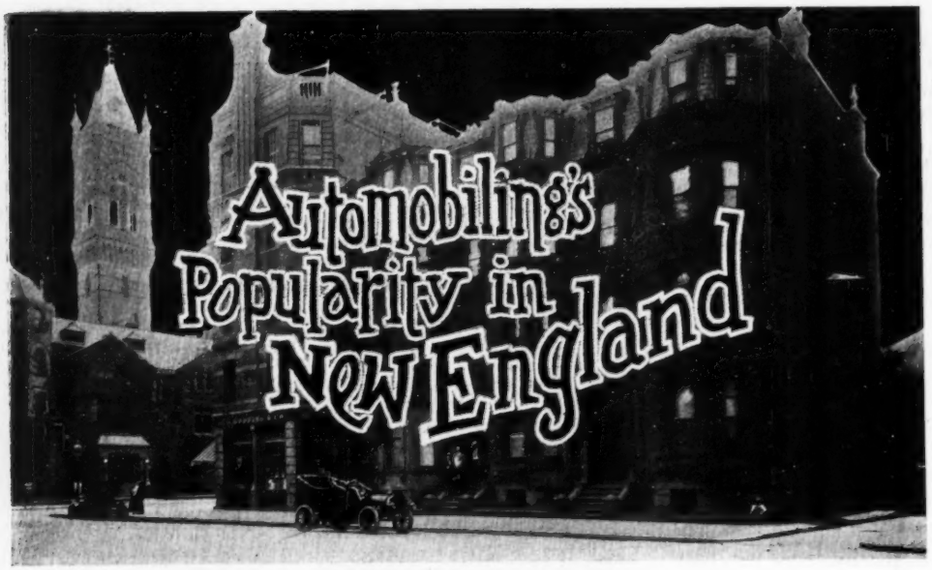
PORTLAND, ME., March 2.—Proving more successful than either of the two exhibitions held in the city before, the third Portland automobile and motor boat show has last week attracted hundreds of visitors to Portland. The big Auditorium was thronged daily, and the show has given an impetus to the automobile trade in Portland the like of which has not been experienced since the industry gained a foothold in the State. Frederick M. Prescott, of Malden, Mass., fresh from the successful Providence, R. I., show, had promised that the decorations for the Portland exhibition would be better than anything else ever shown in the city. He kept his word and many were the words of praise spoken for the artistic and sumptuous way in which the big auditorium was decorated.

In one thing Mr. Prescott was rather unfortunate, and that was in not being able to secure the entire Auditorium. The destruction of Portland's handsome City Building had caused a number of the city officers to take up their quarters in the Auditorium. They occupied the basement and exhibits were consequently excluded from this part of the building. But the main floor nearly made up for the deficiency. Every available inch of space was engaged. The following were the exhibitors and their exhibits:

Boothbay Gas Engine Co., motors; F. A. Nickerson Co., Oldsmobile; Geo. D. Thorndike Machine Co., Mianus motors; W. L. Blake Co., marine motors, oils; The Stanley Co., Stanley marine motors; Vacuum mobiloils; Camden Anchor-Rockland Machine Co., Know motors; Palmer Bros., Palmer engines and boats; Smith & Langmaid, Casco engines; Chas. F. Guptill Co., marine hardware; Harmon Automobile Co., Franklin, White steamers; F. A. Wentworth, Overland, Marion; Gray & Prior Machine Co., marine engines; Thos. Laughlin Co., marine hardware; Alvan T. Fuller, Packard; The James Bailey Co., automobile accessories; Swan & Stuart, Cadillac; Portland Automobile school; Harris Auto Oil Co., oils; Frank M. Low, automobile and motor boat clothing; The Darling Automobile Co.; The Underhay Oil Co.; The Automobile Journal; Evans Stamping & Plating Co.; The Angier Co.; The Randall-Faichney Co.; J. B. Draper Co., automobile robers; Stoughton-Folkins Co., Maxwell; F. A. Nickerson Co., Pierce Great Arrow; Spear Auto Co., For and Fairbanks marine motors; L. C. Gilson Co., Reo, Stanley, Premier; Maine Motor Carriage Co., Stevens-Duryea, Pope-Hartford, Peerless; The Portland Co., Know automobiles.

The general tendency of the Maine market is toward a smaller and cheaper car, and many orders for these types were taken at the show. The runabouts have found especial favor with the physicians and business men who have been searching for a small car in which they may go easily to and from their summer residences. In considering Maine as an automobile market, it must be borne in mind that while the State is as large as all the remainder of New England put together, much of it is still an almost virginal wildness, so far as travel through it is concerned. The lumberman with his chief adjuncts, the saw mill and paper factory, has laid waste hundreds of square miles, but there never were any roads through these immense tracts, and had it not been for the pressing demand for lumber, there would not now be the logging trails which are their sole means of communication. Automobiling is consequently confined, in very large measure, to the southeastern corner of the State and consists principally of traffic between the cities and the seashore resorts, although more and more tourists are now braving the logging trails of the inland country each summer, and it is expected that the coming season will see a marked increase in the number of these itinerant auto camps in the Maine woods.

Up to the present time, 2238 automobiles have been registered in Maine, and as a result of the show, this number will be greatly increased before the Summer is over.



Bay State Automobile Association Clubhouse, Dartmouth Street, Boston.

BOSTON, March 5.—In the opinion of those automobile men who are customarily well posted on the condition of the business, the outlook for 1908 in New England does not possess many of the gloomy characteristics it is supposed to have in other sections of the country. They cannot see how the sale of cars is to be materially diminished during the coming season, when the general business situation has already taken an optimistic trend. All through the period of depression in New York and the West not a single automobile concern in Boston suffered apparent financial distress, and many of them report that their business so far this winter has been better than during the corresponding period of any previous year. People of Boston and of other sections of the territory have bought cars, others have placed orders for spring delivery, and the number of "prospects" is reported larger than usual. All this before the Boston show, generally considered the real beginning of the selling season hereabouts.

Dealers attribute this most satisfactory condition of affairs primarily to the fact that the people of New England are conservative in their business methods and do not rush into things unless they are pretty certain of their value. And when the pinch comes they are less likely to be caught. Secondly, the glowing prospect for the coming season is attributable to the fact that a large section of this territory with great purchasing power is only beginning to be developed for the sale of automobiles. Competition has had the result recently of causing the dealers to reach out from the cities into the country for trade, and it is not at all uncommon for a Boston automobile salesman to make a trip to the up-State towns or up to Vermont, New Hampshire and Maine and bring back several orders. One well-known dealer makes a practice of sending a car on journeys to the smaller towns, thereby interesting their residents in the cars. In this way, by means of a few demonstrations to the leading men, he has caught a large number of customers and interested "prospects" which could not be reached in any other way.

Massachusetts is by all odds the best of the New England states for automobile business. It has more miles of good roads, the largest population, and the highest valuation. Boston, the largest city, has the largest number of automobiles and is the richest field, but such cities as Worcester, Springfield, Lynn, Salem, and the other cities of secondary size offer a rich field for the sale of automobiles. The State of Connecticut cannot be worked to advantage from Boston, and in distributing territory it is a rare case to assign Connecticut, except, perhaps, the eastern section, to a dealer in Boston. It is much more common to assign Nutmeg State agencies from New York, and New Haven has grown to be an important distributing center.

Providence is one of the liveliest automobiling cities in New England. Providence has a flourishing club which holds each year a hill climb of more than local renown, and the city also has its own automobile show, the recent show held in the new armory having been one of the best small exhibitions given outside the larger cities. To some extent the Boston dealers sell cars in Providence, a few of them having that city in their territory. Providence, however, has many dealers who look out for the people of their state.

North of Boston, according to a Boston dealer who controls the whole of Northern New England, Vermont is the best State for automobiles. This statement was made recently in the presence of a number of automobile men, and it created somewhat of a surprise, for few, who had not had experience, had much idea that there was a market in the Green Mountain State. There are many hilly roads and not as much has been done in the way of development of the highways as in some of the other New England States. Nevertheless, each year a good number of cars are shipped into Vermont, and it is estimated that several thousand vehicles are in constant use during the driving season.

New Hampshire is also assuming considerable importance as an automobiling State. Two or three of the larger cities have automobile clubs, and there are several thousand machines owned and bearing the number tag of the Granite State. The State government is doing a large amount of road work, especially in the way of developing through routes from the southerly to the northerly section of the State. There are three principal routes. One leads up the Connecticut valley partly in Vermont and partly in New Hampshire, and crosses over to the White mountains. The second is the Merrimac valley route through Nashua, Manchester and Concord, and the third is the western route, from Portsmouth through the Ossipee to the White mountains.

The hotel men of the White mountains have also done much to stimulate automobile touring, and Bretton Woods early became one of the best-known automobile rendezvous in the country. It has been the destination or the turning point of two Glidden tours, and the "Climb to the Clouds" up Mt. Washington is world-famous. At first automobiling in New Hampshire was chiefly by non-residents, but within the past few years many residents have joined the ranks.

Maine, though it has thousands of acres of territory with no better roads than a logging track, has taken a great liking to the automobile, and the red and white number tags of the Pine Tree State are very common all over New England. There are many strongly established agencies in Portland, and several Boston firms maintain branch agencies in the city. Portland has an automobile club which is alive to the possibilities of touring and which has done much work.

Just how many automobiles there are in New England is difficult to say. It is generally considered that there are from 12,000 to 14,000 machines owned in Massachusetts, and probably there are as many more in the other States. Doubtless 25,000 machines in actual operation is a conservative number, while in the summer the number probably is increased by fifty per cent. by visitors from other States who come to New England for a longer or shorter period.

From the Oranges to Cape Ann

By J. Grant Cramer

The Lighthouse at the Entrance of Gloucester Harbor, a Locality Famed in Song and Story.

BRIGHT and early on the first day of October, Miriam, "Olive," and I set out for Boston. Miriam, "Blue Book" in hand, filled the rôle not of prophetess, but of pilot; I was engineer, and "Olive," strong of engine but gentle of voice, carried us without trouble, as she had done for many thousand miles before. It was cold, and the wind blew from the north so that we were glad indeed that we had brought an abundance of heavy wraps with us. We passed through Hackensack, whose police are said to be unfriendly to autoists, but it was too chilly for their zeal to blossom out so early in the morning. At Fort Lee we crossed the ferry, and soon we were on the old Boston Post road driving through the "neutral ground" of the Revolutionary days, which extended from the American lines along the Byram River to the British lines near Kingsbridge. The unfortunate inhabitants of this territory "feared every body whom they saw and loved nobody," for they were harried and robbed by bands of ruffians who gave allegiance now to King, now to Congress, as happened to be most profitable to them. But quickly the sad, far-off past fades away and is forgotten in the beauties of the present scene, as the eye is continually delighted by the broad Sound, with its irregular coastline of lovely bays and inlets and countless islands—Nature's emeralds in their gleaming setting.

Going on we came to the pretty little city founded two and a quarter centuries ago by the Huguenots, who named the settlement after their old French home, La Rochelle. Later, in Revolutionary days, the Hessians landed there and camped near the site of Larchmont. Passing the yacht club, "Olive" soon purred through the fine streets of Mamaroneck, Harrison, and Rye. The latter was settled by sturdy English colonists, who were not at all disturbed by the fact that the Dutch West India Company had purchased that territory and that possibly some Dutchmen might think they had something to say about the land.

The Pilot did her duty well, and it saved us much time to have her give the directions for the numerous turns and forks in the roads and streets. Her task of "conning" us through Portchester was not an arduous one, and in a short time we had left the Empire State and were in New England, which we entered by a region of beautiful estates, of which Greenwich contained perhaps more than any other city along our journey. From the road we could see that the coastline had become more rugged with promontories standing out into the Sound, sheltering beautiful harbors. Down from the smiling hill country of Connecticut, through dear little valleys, flowed small rivers, the Byram, the Mianus, and other streams. The early settlers of this district finally united with the Connecticut Colony. They were good fighters, as the Indians and afterwards the British found to their cost. Right here in Greenwich, after the defeat of his little band by a greatly superior force, General Putnam escaped from the English by riding down the stone steps which were originally cut for the use of the devout on their way to and from the little church that stood on the hill during those troublous times.

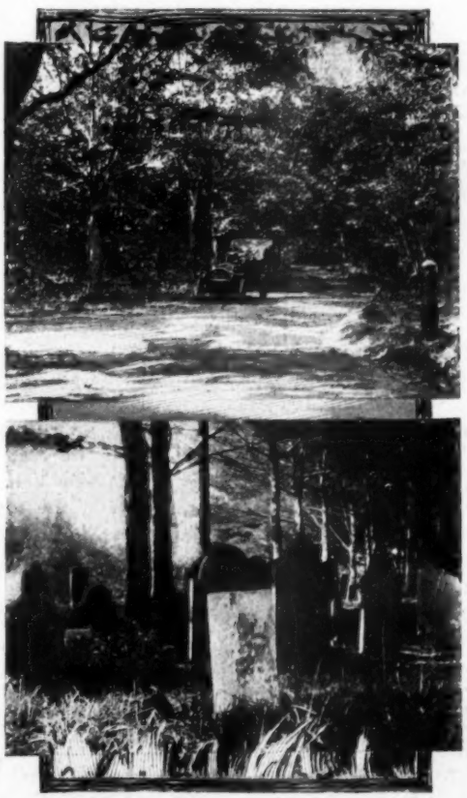
Our undulating road now led us a little more inland through Stamford and Darien, and at the top of one hill we had a superb view looking far out over the Norwalks and the Sound. Three years after the Declaration of Independence all but six of the houses of Norwalk were burned by Tryon's troops, who did not accomplish their purpose, however, until they had had severe losses inflicted upon them by fifty Continentals and a few militia men.

Leaving Norwalk, the Boston post road led us through the charming rural Green's Farms and through Southport, where the Pequot Indians were finally nearly wiped out by Massachusetts and Connecticut troops. Southport has a large public library, the "Pequot Library," the gift of a wealthy citizen, which presents a fine appearance from the charming village street. In Fairfield, with its beautiful green and main street shaded by its grand old trees, we seemed to come upon the first of many lovely villages that we were to see, of each one of which one could say that it was a "typical New England village. Busy, manufacturing Bridgeport, the home of the late P. T. Barnum, was quickly left behind, and soon we drove through the quaint streets of Statford. It did not take us long to cover the four miles between Stratford and Milford, whose early church members must have had an uncommonly good opinion of themselves if we may judge them from some of their resolutions, of which the following are specimens:

"Voted: That the earth is the Lord's and the fulness thereof."

"Voted: That the earth is given to the Saints."

"Voted: That we are the Saints."



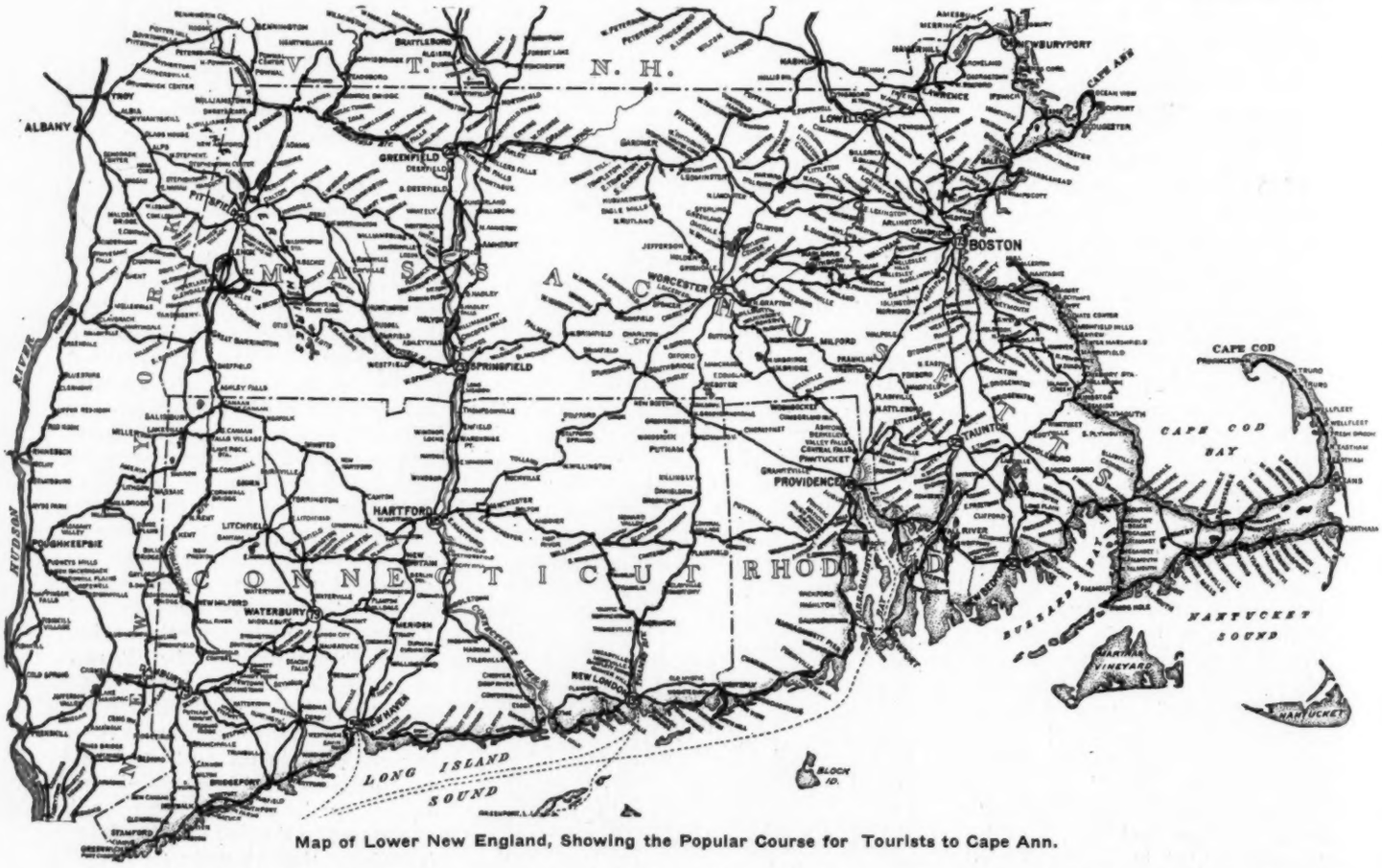
Scenes Near Picturesque Cape Ann.

At Stratford one should turn off to the left to go to the Berkshires by way of the Naugatuck and Housatonic valleys, but as we were going to Boston we headed toward New Haven, which we reached after a delightful drive along the shore road and past Savin Rock. At New Haven we took on gasoline because we had planned to spend our first night in Wallingford, where we wanted to call on friends, about twelve miles north of the "Elm City." As we drove up to the boarding school where two small cousins were staying, the children, who were up in an apple tree, clambered down and ran out, exclaiming: "Oh, Cousin Grant, we recognized 'Olive's' voice and knew you had come." For be it known, "she" was an old friend of theirs and had taken them for many a delightful all-day trip last Summer. As there was no garage in the village, "Olive" had to rest among carriages in a livery stable, where her lodging cost as much as at one of the best garages in Boston. We, however, were well taken care of. Our hotel was built by one of the early editors of the New York *Sun* as his residence, and was a fine example of a stately old country home. We thought the three richly carved mantel-pieces alone worth the trip from New York.

In the morning we drove down to New Haven, and to Branford and Guilford, which have two of the most beautiful greens that we passed through on our trip. The Branford green is very large and around it are the principal buildings—the churches, the town hall, the public library. The trees on the Guilford green are so close together as to give it the appearance of a large grove of fine elms as one approaches. An interesting building is the "Old Stone House," built by the early settlers in 1640 for their minister, Mr. Whitfield. The walls are of stone, three feet in thickness, well able to resist the attacks of murderous Indians of those days.

To such lovers of trees as the Pilot and myself the main street of the little village of Madison was a joy, with the branches of its great elms meeting above us. Continuing along the "Old Boston Street"—the Boston Post Road under another name—we were soon in Clinton, where in 1701 Yale College was founded; after six years the college was transferred to Saybrook, and in 1717 was finally established in New Haven. Another joy awaited us in the beautiful broad street of Saybrook Center, whose macadam is a continuation of the State road, which is better than the rather worn highway between New York and New Haven.

A little further on we came to the Connecticut river, fortunately just in time to catch the small ferryboat, to board which we drove down a steep gangway, where the grade must have been between 30 and 40 per cent. We asked why a bridge had never been built across the river at this place, and were told that the cost would be too great, as the traffic did not warrant its construction. Four thousand cars had passed during the summer, but at less than a dollar per car with its passengers the revenue would not be very large. The two towns that maintain the ferry devote a part of the profits to improving the roads in their immediate vicinity and spend the rest on schools, etc.



Map of Lower New England, Showing the Popular Course for Tourists to Cape Ann.

On the other side, a steep sandy hill necessitated low gear work, but at the top the road became good and brought us into Lyme, beloved of artists, from which it was not a long run to New London. A short distance beyond we came to a glorious view over the Sound, with its many inlets, a foretaste of what we were to have on the morrow; but not for long, for soon after leaving Stonington darkness began to fall, and we found the macadam road to Westerly closed for repairs. This necessitated a long detour over an unknown country road, which was very narrow and at times led through woods and thick underbrush. In some places it would have been impossible for two vehicles to pass each other. This delay, however, did not prevent us from reaching the little Rhode Island town without difficulty in time for a

late dinner. Our hotel was a barn of a place; the rooms were very large with immensely high ceilings, so that one wondered how they could ever be heated. When we rose next morning we thought that Winter had surprised us, but found that it was warmer out of doors than in the house.

Beyond Westerly we came into a stony country with a charm peculiar to itself; gray boulders peeped up from the fields; stone fences and low shrubbery lined the roads, all their tones soft and lovely, blending harmoniously into each other. Here and there were dashes of color, where the sumach and the maple had thrown out flame signals, the exceeding glory of their foliage telling of its approaching death. To the right were magnificent views of the Sound with its countless bays, inlets, estuaries and lovely islands, on which we feasted our eyes as we bowled over the smooth undulating roads. But a few miles before reaching Charlestown we had to come back to earth, for a narrow road with deep sand required some attention. At one place a gang of men were doing something to the road; by no stretch of the imagination could they be said to be repairing it. They were simply throwing loose earth in the shape of huge clods on top of the deep sand, so that "Olive" had first to climb up and over some hillocks of clods and then drop off into the sand on the other side. If it had not been for her double three point suspension and full elliptic springs we should have been well shaken; as it was, we only rocked as if in a boat or a cradle. A little beyond Charlestown the State road gladdened our eyes, but we had to leave it promptly, as it was being repaired, and go around by way of Green Hills. This we were not sorry to do, for the country road was good and we passed through some lovely woodland scenery before rejoining the macadam that carried us toward Narragansett bay.

Striking Back Inland from the Sea.

We were almost sorry when we reached Narragansett, for we knew that we should soon lose sight of the sea. The Pier was utterly deserted and produced a rather depressing effect on one who had seen it during the height of the season. Here a garage keeper told us that a little further on we should come to a fork in the roads; in all probability a boy would be there who would tell us to leave the State road because of repairs and take the left fork, which would ultimately bring us back to the main highway. The garage keeper told us that a few evenings before, finding the road barred, he alighted, threw the bars into the underbrush in a field and went on. Sure enough, going on we met the boy, but heeded his admonition to turn to the left, and it was well that we did, for when a few miles further on we swung back into the main road a few rods from the bars, we saw a man crouching in the bushes, evidently ready to jump out to arrest disobedient motorists who had run past the boy. Such actions as those of our counsellor are what tend to bring automobilists into disrepute and to make them disliked.

A little way out of Narragansett Pier we crossed a curious, old covered bridge which reminded us of similar bridges in Switzerland. Soon after leaving Apponaug we turned into the avenue bearing the same name. This street and its neighbor, Elmwood avenue, are as fine roads as I have ever traveled over, either on this side of the Atlantic or on the other. It certainly required strength of character not to exceed the speed limit. With the throttle lever opened but a trifle more than half an inch from the fully closed position, the speedometer indicated twenty miles an hour. But if the approach to Providence was swift and delightful, the passage through it was slow and tedious. We had to crawl owing to the congestion of traffic in the business portion of the city and to the bad pavements, and as for the drive to Pawtucket, I cannot do better than to quote the words of our guide book: "If there is anywhere a four-mile stretch with more turns in it than the run from Providence to Pawtucket, the 'Blue Book' has yet to hear of it."

We did a very simple thing, however; we tacked on behind a trolley car marked "Pawtucket," and, following that, we had no difficulty in finding our way. Shortly after leaving the town we came on to the State road which extends to Boston, and had a grand road all the way to North Attleboro, where we spent two days with friends. A delightful drive of thirty-three-miles through lovely little towns and villages brought us into Boston through the Fenways, and the afternoon of that day was spent in driving through the Newtons and visiting Auburndale, where I spent a year as a youth.

On the following day we started for a run to Cape Ann and back—a round trip of about 84 miles. We bumped over the Belgian blocks of Washington street, crossing Washington bridge, and went through Charlestown and Chelsea, which certainly seemed to justify what the Bostonians say about it, "as dead as Chelsea." Several miles of blocks had to be covered before we reached macadam, and then came a long stretch of good road across the salt meadows near Revere. To some they might have a bleak, almost desolate look, yet the cocks of salt hay and the wide expanse of meadow, with here and there patches of red, had a charm of their own. Then through Lynn, with its pretty suburb of Swampscott, on streets shaded by fine trees, through which we caught glimpses of the sea, we went on.

Soon we came to historic Salem and crossed a long bridge over Beverly Harbor into Beverly. From Beverly through Magnolia and Manchester up to Gloucester the fine road winding, now near the shore, now a little distance from it, is lined much of the way with fine shade trees and beautiful summer residences. At times one has the impression of driving through a beautiful park.

Gloucester is a picturesquely situated little town, famous for its men who can sail any craft that carries canvas. For about two or three miles beyond Gloucester the road was bad, very rough, muddy and rutty; after that it was good nearly all the way around Cape Ann. The views along the rugged western shore were beautiful, and the little village of Rockport was quaint and curious. It was interesting to see the men dressed in their Sunday best gathered in groups, lounging about the streets of these little towns, and when some of the younger natives shouted, "He's 'way from New Jersey," we realized that to them New Jersey seemed a distant land, and to us as well, for our departure from East Orange seemed more than a few days before—as we looked back over the successive pageants of fields, woods and sea and realized the store of beautiful memories that we had accumulated. The country in its October brilliance—with its foliage gorgeous beyond what we had ever seen—the uniformly clear, fine weather, the absolute reliability and freedom from trouble of our good car, all contributed to make this a delightful and never-to-be-forgotten trip that it would be difficult to duplicate on this side of the Atlantic.

Where "Mother Ann's" Jutting Rocks Meet the Sea.

SEVEN HUNDRED MILES IN NEW ENGLAND

By STANLEY W. COOK.

STARTING from Springfield one summer morning, we headed the machine over the well-trodden path towards Boston. This road, which on the whole is in the very best of condition, is marred by one stretch of very poor road about seven or eight miles long. The run to Boston was a most glorious one. Each of the six cylinders kept perfect time with its mate and nary a skip. What more could one wish for?

Leaving Springfield, we passed the large grounds of the Springfield Armory on the left, and going up a gradual incline came to the level, smooth road that took us out of the city on the way to North Wilbraham. Here there is a bad undergrade crossing that makes a short turn, cutting off the view of the road ahead. Passing through here the next town we came to was Palmer, a very peculiar place to get through if one is not acquainted with the numerous turns. Between Palmer and West Warren came the bad stretch of road which is actually a disgrace, when one considers that this is the main through route leading across the State.

The road then passed through a series of New England towns, among which is the town of Leicester, well known to most motorists. Here two years ago I had the pleasure of making the personal acquaintance of Constable Quinn, who was kind enough to show me the way to the Worcester Court House.

From Worcester there was a choice of several different routes to Boston. We decided on the well-marked and most frequented one by way of Shrewsbury, Marlboro, Sudbury, and Weston, all the way on fine macadam. We arrived at our hotel in Boston just 4 hours 10 minutes after starting. The entire run was made on the high gear without a stop.

Taking in the Sights of Boston and Vicinity.

The afternoon was spent around town on various errands, and in the evening we took a short ride through the Fenway, one of the noted park systems of Boston. One could spend a most profitable week making short runs around the Bay State Capital over some of the most beautiful and historical drives imaginable. The next afternoon we ran up the North shore as far as Swampscott and back, a run of 52 miles, including a detour through Charlestown. The roads were perfect and the boulevard follows the shore most of the way, passing through Lynn and Revere Beach.

The third afternoon was spent meandering slowly along the South shore as far as Nantasket Beach, passing through many interesting and historical places. This day only 42 miles were made. It was economy, however, to run through this part of the country at a very careful pace, as the officers of the law believe in making motorists run slow enough to fully appreciate the beauties of their towns.

The fourth day we started off bright and early for a run down to the end of Cape Cod. We followed the South shore as close as possible, and then continued on the inside part of the cape down to the little old historical town of Provincetown. A stop for lunch was made at Plymouth, where the Plymouth Rock is held up as the center of attraction. The roads on the whole were in very excellent shape, with the exception of a few stretches of sand down near the end, which, however, did not cause any trouble. The hotel was little more than could be expected in such an out-of-the-way place. As for the mosquitoes, if there could be a competition arranged between the Provincetown and the New Jersey lances I'd put all my money on the Provincetown variety. The distance for the day was 141 miles, which we did in 6 hours 30 minutes, sufficient proof of the quality of the roads that abound in this vicinity.

The next day the start was made at 9:30 A.M., and after retracing quite a bit of the previous day's run we cut across the cape to the outside edge. Considerable sand was met, but nowhere sufficient to use the low gear, most of it being covered without even using the second. We stopped for lunch at Wiano, a small summer place pleasantly located on the shore. The hotel here went by the demure name of Cotochesett. After lunch the run was continued on through New Bedford and Fall River to Providence, covering in all 160 miles. The road between New Bedford and Fall River is a most tempting one for friendly brushes with other cars. It is quite wide and runs through open country most all the way, with practically no hills and nearly straight.

On the Way Home from Roger Williams' City.

The sixth and last day of the trip was from Providence to Springfield, the starting point. This part of the road was familiar to me, as I had been over it several times before, so no time was lost asking the usual questions and consulting guide books. We left Providence at just 9 o'clock and from there went first down to Narragansett Pier. From Providence to the Pier was very evident the way in which fast driving will tear up the roads if they are not kept in constant repair. Two years ago when I went over this same stretch it was in excellent shape. Now at the turns the inside is all worn off to the lower foundation of coarse rock, while on the outside the loose stones have been piled up in regular ridges where they have been thrown by cars skidding around the turn. On some straight stretches two regular grooves have been cut through the top dressing such as no slow-moving teams could do.

Near New London came our first tire trouble, a puncture that required quite a bit of work to fix up, though not much time was lost. After passing through a series of toll gates and ferries, we at last came to the mouth of the Connecticut river where it empties into Long Island Sound. After crossing to the other side on a little ferryboat that looked ready to fall to pieces most any moment, we started up the river, following it closely the rest of the journey, passing through Hartford and Windsor Locks, where the river was recrossed, entering Springfield by the way of Long Meadow. This last day's run was 175 miles, making a total of 675 miles as the distance between towns; this added to what running we did around Boston in the mornings we were there made a little over seven hundred miles as a total.

The Car and the Weather Agreeable.

With the exception of the one puncture and the changing of one spark plug, the run was made without any trouble at all. As we sat at dinner that night everyone came to the conclusion that for real true enjoyment nothing can go ahead of the combination of a willing car, good roads, and fair weather, and nowhere else in the country are the last two essentials of the combination to be found to such an extent as in New England. The downeast brand of weather is almost as good as the majority of its main roads. There are stormy days to be sure, but they are not frequent and seldom come together in one of those continued stretches that make touring unpleasant. In anything but downright bad weather, it is possible to get along without any great difficulty if covering the ground be the tourist's chief desire, as the macadam roads are generally in such shape that it takes far more than an ordinary storm to make them at all difficult for automobiling. But one is scarcely in a mood to enjoy scenery under such conditions, and the New England variety is worth seeing.

QUAINTEST CAPE COD WHICH RESISTS MARCH OF PROGRESS

By ARTHUR R. WILLCOX.

A GREAT sandbar venturesomely stretching out seventy miles into the ocean; its jagged edges forming scores of pretty harbors; its wild dunes capped here and there with a lonely lighthouse or a "wireless station," and its beaches dotted with quaint hamlets, fishermen's shacks, and life-saving stations; with its ever-present suggestion of the sea, and the quaint characters who make this neck of land a separate country, isolated from the mainland and apart from the times: that is Cape Cod.

Barnstable, Buzzards Bay, Yarmouth, Provincetown—these are names that instantly suggest the one heritage of the old days that has been preserved inviolate against the assaults of time. And yet, isolated and antique though it be, the Cape Cod country is fast becoming a paradise of motorists; the "devil wagon," as well as the locomotive, pushing its way to the farthest point.

The western portion of the cape, as far east as Chatham, is covered with a network of excellent roads, which furnish a veritable scenic railway ride to the many automobilists who are touring the cape in ever-increasing numbers. The lower part of the cape is already a popular summer resort; but those who, in these latter days of rush and strenuosity, love to linger amid the scenes of former days and study the quaint characters that inhabit this picturesque locality, find the seaward end rich in the treasures they seek.

Those who select the automobile as the key to the real "Quaintest Cape Cod" of the eastern end, had best provide themselves generously with horsepower, for the "network of fine roads" finally simmers down to one turnpike, with miles of hub-deep sand that only the hardy survive; and the arrival of an automobile at Cape Cod excites as much interest as the arrival of the trains—which reach the end of the cape in apparent comfort despite the roller-coaster aspect of the railroad.

Between Chatham and Orleans there are eight miles of sand almost impassable for the automobile, but as this stretch may be avoided by keeping on the northern route, there remain only two bad stretches of a few miles each, which are a good test for the machines and supply their own reward to those who succeed in conquering them. In going through the first of these two stretches the autoist must follow the telegraph poles in a general way, mapping out his own route, and exercising extreme care to avoid traveling in the road. But there are rich rewards in store for those who survive these sandy stretches, and the rolling, winding road, paralleling the little single-track railway, skirting the water's edge, hemmed in by the vast stretches of bay and ocean, and cooled by delightful breezes, is a shore drive that cannot be duplicated anywhere.

From South Wellfleet, where the steel towers of the Marconi wireless station are picking up messages from over the sea, through miles of wildest sand dunes, with an occasional village or lighthouse, to fishy Provincetown, where the Pilgrims first set foot on American soil, the ride is one never to be forgotten.

Provincetown, the quaintest of relics of the old days, though it contains comfortable hotels, lays no claim to fame as a resort, its chief attraction to the tourist being the quaint atmosphere that has been preserved against the romance-blighting march of progress. Here one may see the old "town crier" treading his way slowly through the little street, ringing his bell and shouting in a weather-beaten voice the announcements on his day's list. The air at times is freighted with the pungent odor of codfish, drying by the thousands on racks at the water's edge.

The big blue sweep of Cape Cod Bay is dotted with ships; the land stretches back southward in one long narrow curve to the misty mainland—and everywhere else is the sea. Up at "the lookout" bronzed old salts study the movements of ships in the offing and speculate on the weather possibilities, or discuss the beautiful Pilgrim's monument which is now being erected in commemoration of the landing of the forefathers at this spot, while down at the wharf are landing pilgrims to the shrine of Antiquity, reverently treading the hallowed ground, eagerly imbibing the sounds and sights and smells of Provincetown, and, far from the prosaic atmosphere of the cities, are living for a few golden hours another existence, among the picturesque Cape Cod folks.

FOR THOSE FINED NEAR ALBANY, N. Y.

ALBANY, N. Y., March 2.—About the first of October, 1906, the authorities in the town of East Greenbush, Rensselaer County, conceived the idea of raising enough funds to build new bridges and take care of the poor of the town at the expense of automobile tourists who passed through there.

Nearly every one approaching Albany from the East or South has to travel over a stretch of macadam road, beginning at the town of Schodack and passing through the town of East Greenbush. This new State road is contiguous with a number of miles of very poor clay road. Consequently nearly every autoist who travels over this road is very apt to run his car to the limit of twenty miles an hour.

Jesse P. Van Ness, the justice of peace, secured the services of a number of deputy sheriffs and started his trap, and thereby collected from automobilists $800. During the fall of 1906 and the summer of 1907 there was practically $800 spent and retained by this justice of peace. A taxpayers' action has been brought by residents for an accounting.

As many automobilists have contributed to this fund, it is requested that any person reading this notice, who has paid a fine in this town, send his name with date of arrest and amount of fine levied to Bender & Hinman, attorneys, 81 Chapel street, Albany, N. Y.

WOMEN'S CLUB RUNNING CALIFORNIA SHOW.

SAN FRANCISCO, Feb. 26.—After the Dealers' Association of San Francisco had discussed an automobile show and abandoned it, and the Automobile Club of California had considered it and decided to leave it alone, the California Women's Automobile Club resolved to accept the responsibility of a public exhibition the first week in March. As last year, the Coliseum will be the scene of the automobile display.

In connection with the show there will be two automobile parades under the guidance of the Automobile Club of California. Among other outdoor events are a hill climbing contest for runabouts to the summit of Buena Vista Heights, the entire course being visible from the Coliseum; on Wednesday, March 4, there will be a touring car competition over the same course, and on the following day a free-for-all motorcycle race on the hill.

Although dealers have been divided on the advisability of holding a show, the following makes of cars will be represented: Acme, Aerocar, Auburn, Chadwick, Dragon, Elmore, Frayer-Miller, Gale, Glide, Jackson, Locomobile, Marmon, Matheson, Maxwell, National, Overland, Pennsylvania, Renault, Stearns, Stevens-Duryea, Tourist and Winton. Motor boats, airships and a full line of accessories will also be exhibited at the women's first San Francisco auto show.

AUTOMOBILE HUB BALL BEARINGS*

By HENRY HESS, Member Society of Automobile Engineers.

THIS is an account of certain experiments undertaken to determine the behavior of ball bearings as used in an automobile hub under proper and improper conditions.

The Bearing.—The bearing selected for test is of the well-known Hess-Bright type, having two-point contact, races of uniform cross-section, *i. e.*, uninterrupted by any filling opening, and with elastic, individual separators interposed between

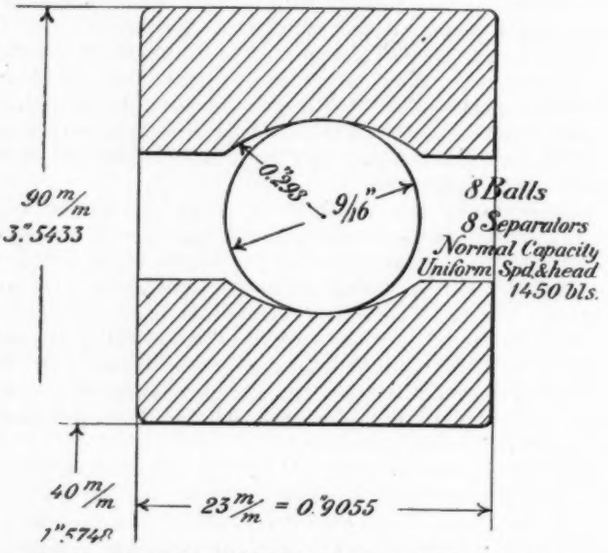


Fig. 1.—Dimensions of ball bearing employed for test.

Editor's Note.—Through a draughtsman's error the explanation reads "spd and head" instead of "speed and load."

the balls. The size is that known as No. 308; its dimensions are given in Fig. 1. This is a size very widely used in the hubs of automobile touring cars.

Use Conditions.—In a hub the load will be purely radial, *i. e.*, at right angles to the axis when the car is going straight ahead. When rounding curves or weaving from side to side an end thrust, parallel to the axis, will be imposed in addition. Properly mounted and taken care of, the bearing will be amply lubricated and kept free of rust and grit.

Test Conditions.—Test conditions were arranged to conform, as nearly as might be, to the proper and improper conditions that would be found in actual use. They, therefore, embraced:

(I) Radial loads only.

(II and III) Combined radial and thrust loads; and

(IV) Thrust loads only.

The latter condition is not likely to obtain in a hub or axle, but is of interest, as the question of behavior under that condition is often raised.

Test runs with (A) copious lubrication, (B) practically no lubrication, (C) with rust, and (D) with grit, were repeated under each load condition. The loads ranged from a low load as compared with the capacity of the bearing to a very decided overload. The radial load started at 600 pounds and was raised by 200-pound increments to 2,000 pounds. The thrust loads ranged from 50 pounds to 400 pounds by 50-pound increments. The speed was taken at 300 r. p. m., this corresponding approximately to thirty miles per hour of a car. Copious lubrication was provided by allowing the bearing to dip into a relatively large reservoir of oil, so that the bottom balls were carried through that. For dry running the bearing was rinsed out in gasoline and then dried out in an air blast; this left a very slight oil film, not perceptible to the touch, but nevertheless present. After this test the bearing was rusted in water until a light coat was deposited on all surfaces. Owing to the high finish of the balls and races the rust film on these was not thick; on the separators, which are not polished, the rust was much heavier and interfered decidedly with their elastic action. Grit was provided by throwing sharp building sand between the races.

Comparative Results.—The measured friction coefficient may safely be taken as an index of the running under each condition. It is certain that a low coefficient means favorable running and long life, while an increase in the friction indicates an adverse development.

The Apparatus.—The machine employed is a special friction measuring machine, capable of definitely measuring the force of the frictional resistance due to radial loads up to 15,000 pounds, of thrust loads up to 10,500 pounds, and of combined radial and thrust loads in any ratio within these limits, and at speeds ranging from 200 to 2,000 r. p. m. The radial load is applied to the bearing under test by a system of weighing beams through a tension rod that is jointed near the test bearing. The friction of the bearing swings the joint to one side by an amount depending upon the frictional force. This movement is small, but measurable by a microscope and within a negligible error. The thrust load is applied by a second system of weighing levers through a small wire of high elastic limit attached to a yoke resting against the outer race of the bearing. The friction tends to rotate this yoke. This tendency is resisted by a delicate set of scales, an error of observation of not over half of 1 per cent. is had without involving particular nicety of manipulation. The principle of the machine as to the radial friction

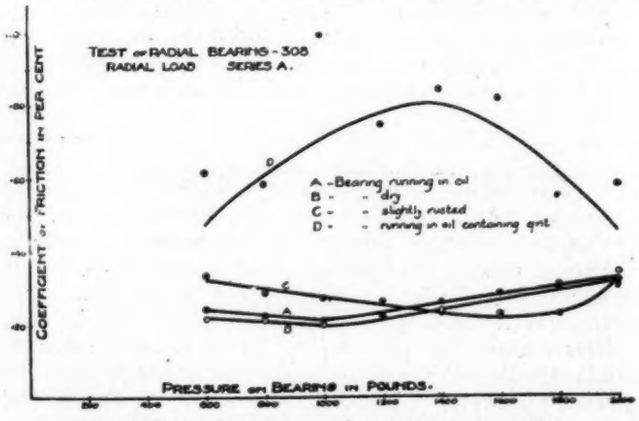

TEST OF RADIAL BEARING - 308
RADIAL LOAD SERIES A.
COEFFICIENT OF FRICTION IN PER CENT
A - Bearing running in oil
B - " dry
C - " slightly rusted
D - " running in oil containing grit
PRESSURE on BEARING IN POUNDS.

Fig. 2.—Test of bearings under radial loads only.

and measuring features is due to Professor Stribeck, of the Technical Laboratories, near Berlin, extended, however, to give the ability of applying loads about ten times as great while realizing greater accuracy of measurement and convenience of handling. The arrangement for thrust loading and thrust friction measurement is original.

Plotted Results.—A diagram of the observed friction coefficients is devoted to each series, I to IV, and each is given a curve, laid through the observed points of the runs made with the bearing lubricated (A), dry (B), rusted (C), and grit (D).

In Fig. 2, the bearing was run under Radial Loads Only. The friction (always referred to the bore of the bearing in

*Paper read before the Society of Automobile Engineers.

order to permit of ready comparison with the friction that occurs in plain journals at the bore or shaft surfaces) ranges from 0.21 to 0.25 under copious lubrication (A). The Dry Running curve (B) is parallel, and, curiously, lies about 10 per cent. lower. The difference represents not the difference in bearing friction, but that of the relative resistance of the copious oil supply and the slight film left after the oil was washed out in gasoline. It would not do to conclude that this justifies the cutting out of oil, as is not infrequently advised; aside from other considerations, oil, and plenty of it, is necessary as a rust preventive.

Curve C, with the Bearing Rusted, shows at first about 50 per cent. increase in friction, and then, very surprisingly, a gradual drop, curving down to the best values of A and B; but toward the close rising again sharply. An examination of the races involved shows that the initial higher friction was due to the rust, that, as this was worn off, the friction dropped and that the roughing due to the rust having destroyed the high polish and the truth of the ball and race surfaces was attended by an increasing breakdown of these surfaces, as indicated by the final fast rise of the friction. Prolonged running would undoubtedly have confirmed the road experience of the very serious influence of rust on bearing life and endurance.

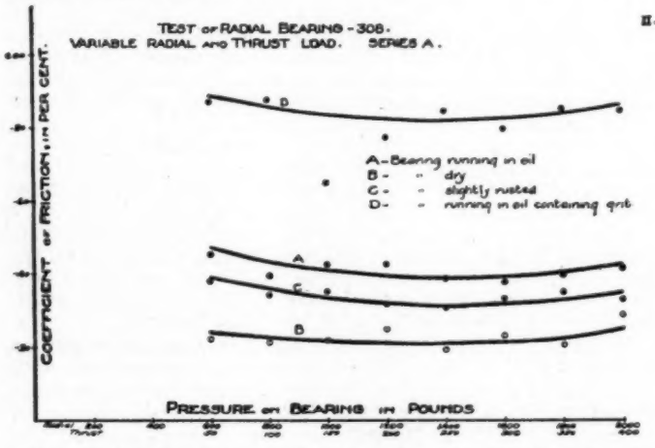

II.
TEST OF RADIAL BEARING - 308.
VARIABLE RADIAL AND THRUST LOAD. SERIES A.
COEFFICIENT OF FRICTION, IN PER CENT.
A - Bearing running in oil
B - " dry
C - " slightly rusted
D - " running in oil containing grit
PRESSURE ON BEARING IN POUNDS

Fig. 3.—Friction under combined radial and thrust loads, increasing simultaneously.

As was to be expected, the insertion of grit raised the friction very decidedly. The readings varied widely, so that the average curve D will be seen to lie quite far from some of the points. As the run was started with the lower loads, and as it took some time to bring about an even distribution of the crudely inserted grit, the friction rose as the grit involved more of the surfaces; the drop after that is accounted for by the gradual working out of the grit and to the grits being worked down and partially destroyed by the wearing action of the balls. In an automobile hub the grit would be more serious since it could not readily escape. The friction due to grit and rust tends to draw the end plates and separators under the balls, and as these two destructive agents wear down the parts the separators may be, and occasionally are, drawn under the balls. That means a destruction of the separators, while the violent wedging also occasionally causes the outer race to be split.

Fig. 3 gives the friction of the bearing carrying simultaneous radial and thrust loads, increasing simultaneously. A comparison of values under the condition of good lubrication, *A*, between Figs. 2 and 3, shows that a thrust load of one-quarter of the simultaneous radial load about doubles the total frictional resistance, and that, as there is no pronounced upward trend within the load limits advocated, such combined loading is good practice. The curves of Fig. 4 for a constant radial load of 800 pounds, and a variable thrust

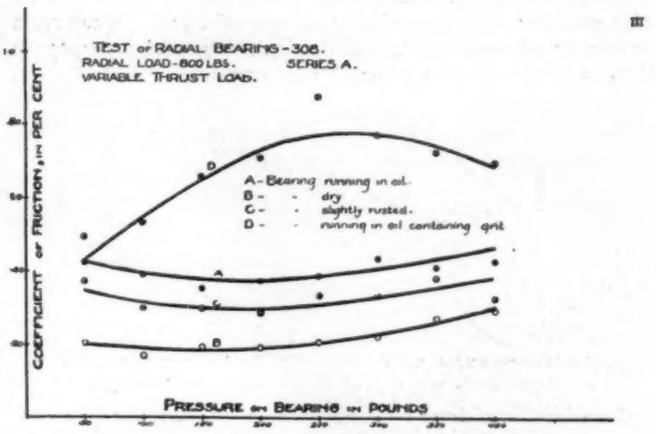

III
TEST OF RADIAL BEARING - 308.
RADIAL LOAD - 800 LBS. SERIES A.
VARIABLE THRUST LOAD.
COEFFICIENT OF FRICTION, IN PER CENT
A - Bearing running in oil.
B - " dry.
C - " slightly rusted.
D - " running in oil containing grit.
PRESSURE ON BEARING IN POUNDS

Fig. 4.—Constant radial load of 800 pounds and variable thrust load of 50 to 400 pounds.

load of from 50 to 400 pounds, confirm the deductions drawn from Fig. 3. The advisability of submitting this two-point type of radial bearing to thrust loads has been frequently questioned, and occasionally even the admissibility of doing that has been denied.

Fig. 5 gives a series of curves showing the friction in the conditions *A, B, C* and *D*. It will be seen that in every case the friction falls with an increase of load. It is generally reasoned that under thrust the balls must wedge between the curve races. Were that true, then the friction should not only be high, but, even though not equally high under all loads, certainly not decreasing under increasing loads. The curves bear out my reason in explanation. We know, of course, that under load there will be a deformation of the shape of balls and races, and that the theoretical point contact is actually a surface contact of small area. I assume that this surface has an average inclination which gives a blunter wedge than the geometrical angle of the theoretical point contacts. In Figs. 6 and 7, I have tried to show that Fig. 6 gives the wedge angle (b) for the theoretical contact point (a), with a thrust load applied to the race in the direction of the arrow. Fig. 7 shows the surface of deformation (d), with the larger wedge angle (e). As the load increases the deformation must increase; an increasing bluntness of the wedge angle with increasing load should therefore be accompanied by a decreasing frictional coefficient. This reasoning is confirmed by the trend of the curves of Fig. 5. Also, it has been observed that the thrust-carrying capacity of the heavy type of radial bearing is relatively less than that of the medium and light types. Now the heavy type has much larger balls and these will conse-

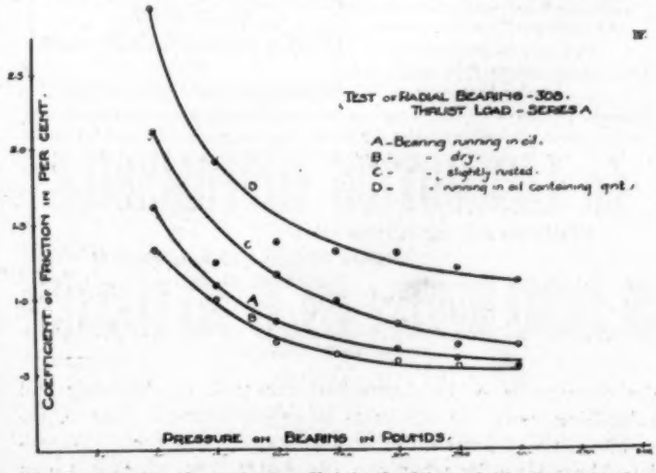

IV.
TEST OF RADIAL BEARING - 308.
THRUST LOAD - SERIES A.
A - Bearing running in oil.
B - " dry.
C - " slightly rusted.
D - " running in oil containing grit.
COEFFICIENT OF FRICTION IN PER CENT.
PRESSURE ON BEARING IN POUNDS.

Fig. 5.—Results of constant radial load with variable thrust loads.

quently deform less under heavy loads; that means a smaller change from the theoretical wedge angle, and, therefore, a relatively greater friction; so that this observed fact may be taken in further confirmation of my reasoning.

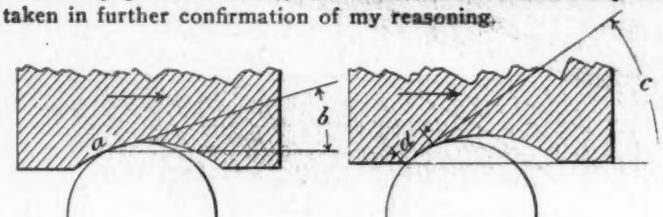


Fig. 6.—Wedge angle with thrust load.

Fig. 7.—Deformation with large wedge angle.

General Deductions.—1. The two-point, annular, uninterrupted race ball bearing with elastic separators is efficient and durable under the legitimate conditions of work imposed on it in an automobile hub, which are not unusually severe.

2. Simultaneous radial and thrust loading is permissible and does not result in a material increase of friction as compared with radial loading only.

3. The bearing should be copiously lubricated; easiest running will be had with the least viscous lubricant; that, however, must not be so light as to escape readily, but must be retained by the mechanical arrangement of the hub.

4. Rust must be rigidly excluded, as it will result in breakdown of the bearing surfaces and of the carrying capacity.

5. Grit must be rigidly excluded, as it will result in a wearing away by grinding of the balls and races.

6. As between rust and grit, the former is the more dangerous, since it involves the destruction of carrying capacity, while grit merely brings about a faster wear than is desirable. Rust and grit are nearly always found associated, as the conditions admitting the one generally admit the other. Their combined influence is decidedly bad. Fortunately, both can be kept out by means which are available, simple and easily applied at small expense to automobile hub construction.

HORSE KILLS 3,900, MAIMS 19,500 YEARLY IN FRANCE

PARIS, Feb. 17.—Being the latest form of locomotion, auto accidents are emphasized in the press to such an extent that the average individual has a firm belief that the auto is the most deadly of all road vehicles. To such an extent has the belief grown in France, that automobile clubs throughout the country have set themselves the task of obtaining and publishing complete statistics in every district. The Automobile Club of Sarthe, the first to take up the work, has published broadcast the accompanying poster, from which it is seen that in an automobile racing district 50 people were killed by horses and 250 injured in one year, without a single automobile accident occurring. Translated, the poster reads:

LA VERITE
SUR LES
ACCIDENTS DE LA LOCOMOTION
STATISTIQUE
Du Département de la Sarthe
Du 1er OCTOBRE 1907, au 31 janvier 1908
(4 MOIS)

CHEVAL		AUTOMOBILE	
Nombre d'accidents. . . .	89	Nombre d'accidents. . . .	5
Nombre de MORTS . .	15	Nombre de MORTS . .	néant
Nombre de blessés. . . .	84	Nombre de blessés. . . .	5

Nota. — Les récits détaillés de tous ces accidents, enregistrés par commune et par date, sont à la disposition du public tous les jours, sauf le dimanche, de 9 heures à midi et de 2 heures à 7 heures, au Secrétariat de l'Automobile-Club de la Sarthe, 7, Boulevard René-Levasseur, Le Mans.
Le Secrétaire Général : G. DURAND.

En 1906	Chaque Année
Année pendant laquelle le Grand-Prix de l'A. C. F. s'est disputé sur le Circuit de la Sarthe. Il n'y a pas eu dans la Sarthe UN SEUL ACCIDENT MORTEL d'AUTOMOBILE	LE CHEVAL Y tue en moyenne 50 Personnes ET Blesse grièvement plus de 250

Le Département de la Sarthe comptant 58.000 chevaux, pour un total de 4.521.000

La LOCOMOTION HIPPOMOBILE
A donc à son actif, pour la France entière,
l'effrayante hécatombe annuelle et moyenne de
3.900 MORTS! 19.500 BLESSÉS!

Affiche d'Intérieur.

The truth about transportation accidents. Statistics of the Department de la Sarthe from October 1, 1907, to January 31, 1908 (four months):

Horses.		Automobile.	
Number of accidents.....	89	Number of accidents.....	5
Number of deaths.....	15	Number of deaths.....	None
Number of injured.....	84	Number of Injured.....	5

Note.—The detailed accounts of all these accidents, registered according to commune and date, are at the disposition of the public every day except Sunday from 9 till noon, and from 2 to 7, at the Secretarial offices of the Automobile Club of Sarthe, 7 Boulevard Rene-Lavasseur, Le Mans. G. Durand, Secretary.

During 1906, the year in which the Grand Prix of the Automobile Club of France was run on the Sarthe circuit, there was not a single fatal automobile accident in the Sarthe.

Each year the horse kills an average of 50 persons and seriously injures more than 250 in this département.

The Department of the Sarthe having 58,000 horses out of a total of 4,521,000, horse transportation is therefore responsible, in the whole of France, for the frightful average and annual hecatomb of 3,900 persons killed, 19,500 injured.

THE NEWS FROM GERMANY.

BERLIN, Feb. 28.—The German Crown Prince has been enrolled at the Technical High School, Berlin, for a series of courses in machine building and will also devote attention to motor mechanics. He will be the first of his race who has chosen to be initiated into technical matters, although all members of the Hohenzollern family learn some profession.

His Majesty, the German Emperor, held a reception on February 12 for the autoists chiefly interested in the new Taunus track project, which was attended by several members of the government as well. Herr von Friedlaender-Field discoursed on the various track proposals, guided by plans, but the Taunus received the chief share of Imperial favor, and it is therefore safe to say that it will be put through as soon as possible, when funds will also be forthcoming. The track would commence between Gravenwiesbach and Brandoberndorf and finish up at Obernsel between the Saalbury and Holemartz.

The three Opel cars destined for the Grand Prix are now being tested and are doing well. Fritz Opel has achieved an average speed of 145 kilometers on his car in spite of bad roads. They were originally equipped with detachable wheels, but owing to the race regulations these have been done away with and dismountable rims put in their stead.

LETTERS INTERESTING AND INSTRUCTIVE

MORE ABOUT BRAKING WITH THE MOTOR.

Editor THE AUTOMOBILE:

[1,204.]—I have been much interested in following the different articles in your paper which have appeared from time to time on the subject of using the engine for the purpose of braking the car on steep grades, and more particularly in the article of C. F. Redden, in your issue of February 20. I have followed the discussion very closely, but from all that I can gather there appear to be several inconsistencies in the directions as given by the several writers on the subject. In this article of Mr. Redden's, for instance, he states "In braking the car by means of the engine the greatest care must be used, and the car itself and the motor should be as nearly at the same speed as possible," while just above that he says "that the electric current should be switched off." Now I have driven a car for three years, and at present have a "30," but in all that time I am unable to locate a single instance where on coming to the top of a descent and cutting out the ignition my engine failed to come to a complete stop, then if the gears were shifted it would, of course, necessitate the letting in of the clutch and engaging the engine from a standstill, thereby causing quite a shock to the entire transmission in so doing. I take it, of course, that Mr. Redden means to change the gears and engage the clutch, cutting out the electricity, but his article does not make that point clear.

But the point on which I would like to have same clear information is this. I find in practice that on almost any ordinary grade I can hold my car down to a perfectly safe speed by simply closing the throttle tight, and I do not find that it makes any appreciable difference to cut out the ignition at the same time, nor can I see any logical reason why it should. It is a fact that with the car standing still and the engine running free that by closing the throttle entirely the engine will at once come to a stop. Now if that is the case, what is the use of cutting out the ignition when coming down a grade and using the engine to brake the car? If the engine will not run with the throttle closed when standing still why does it not give the same resistance on a down grade as it would if the ignition was cut out? I find in practice that on the majority of grades as found in running over the country that by the time the ignition is cut out and the car brought under control that the bottom of the grade is so nearly reached that one wants to withdraw the clutch and let the car run free for a time and then, of course, with the ignition cut out the engine at once comes to a standstill, then on again letting the clutch engage you have the unpleasant experience of a sudden jar to the whole transmission to start the engine, and the only way to avoid that is to wait until the car comes to almost a complete standstill, which is something that one does not like to do, especially if in the least hurry, or trying to make time.

But I would like very much to have some one explain just what the difference in braking power would be from the engine under the two different sets of conditions, viz., running with the throttle entirely closed and the ignition on, or running with the same conditions and the ignition cut out.

Any information on this point will be greatly appreciated in your "Letters Interesting and Instructive."

Richfield Springs, N. Y. C. B. CONRAD.

If it be possible to bring the motor to a stop by closing the throttle when running free, the only thing to be accomplished by cutting out the ignition in coasting would be economy of current, in case a battery is employed as the source of current. The fact that a spark was occurring in the cylinder could have no effect whatever on the braking power of the motor when used in this manner, provided that the throttle closed sufficiently to prevent the inspiration of sufficient fuel to cause an explosion. Where the motor is to be used as an auxiliary brake on a long, steep descent, and it is valuable for this purpose to relieve the running brakes, we should recommend dropping into a low gear before getting over the brink of the hill, and then simply closing the throttle, as you state is your custom. On ordinary grades, it would scarcely be necessary to drop from high-gear, as the resistance of the latter would be sufficient for all ordinary purposes. Much less strain is put upon the motor by leaving the ignition current on, and gradually opening the throttle at the bottom of the hill, than would be the case where the throttle is left even partly open, and then the current is switched on. Many drivers, however, merely cut out the ignition.

HORESPOWER AND VALVE-TIMING OF MOTOR.

Editor THE AUTOMOBILE:

[1,205.]—Will you kindly answer the following questions, which I am particularly interested in?

1. How many horsepower will a four-cylinder marine motor develop at 600 r.p.m., with a bore of 5 5-8 by a 6-inch stroke, and state what formula you have used and if the same can be used in rating automobile motors?

2. How much lead should the valves of this marine motor have and compare the same with the valves of a high-speed motor?

Chicago, Ill. AUTO ENTHUSIAST.

1.—The indicated horsepower of the motor in question would be 23.04, the formula employed being as follows:

$$I.\ H.\ P. = \frac{D^2 \times L \times R \times N}{18{,}000}$$ in which

D = diameter of the cylinder in inches;
L = length of the stroke in inches;
R = number of revolutions per minute;
N = number of cylinders.

The denominator is a constant, calculated on the assumption that gasoline is to be employed as the fuel, and is given by Roberts. This formula is equally applicable to calculating the I. H. P. of automobile motors.

2.—The exhaust valve should begin to open at a point 18 to 20 degrees on the crank circle in advance of the lower dead center, closing when crank has just passed dead center, or 1 to 2 degrees. The opening of the inlet valve corresponds to the latter point and it remains open until the crank has passed the lower dead center, about 10 to 15 degrees. In a high-speed motor, running at 1,200 r.p.m., these factors would be increased to 30 to 35 degrees in the case of the exhaust, and 20 to 25 degrees in the case of the inlet, but it will be found that no arbitrary figures can be taken as a standard in this respect, automobile designers having departed almost universally from former standards by greatly increasing the valve diameter, which permits of leaving the valve closed a proportionately greater part of the stroke. With the small valves formerly used, the lift would be too great to make a high-speed motor either durable or silent, as the hammering would be excessive. Consequently, the valves have been made very large in order to permit of employing a minimum lift, and on the latter will naturally depend the amount of lead required in every case.

EFFECT OF LENGTHENING THE STROKE.

Editor THE AUTOMOBILE:

[1,206.]—Will you kindly answer the following questions? Does the length of the stroke of a gasoline engine make any difference in the power developed? It would seem that it does not by the A. L. A. M. formula, although a great many other formulæ make use of it in computing the horsepower of a motor.

South Norwalk, Conn. RUSSELL FROST, JR.

Both the power and the efficiency of an internal combustion motor are increased by lengthening the stroke, for the reason that the power created comes entirely from the expansion of gases raised to a high temperature and pressure by their rapid combustion, or explosion, as it is usually termed, though this is somewhat erroneous. As is well known, this pressure is extremely high at the moment of ignition, as shown by the almost vertical line of indicator cards, and the drop is likewise extremely rapid, as is evident from the form of a gas engine indicator card when compared with the sustained pressure line of a steam engine. As this pressure is the sole source of power, it will be evident that the greater proportion of it that is utilized, the greater will be the power developed per unit of fuel. To do this the stroke has to be lengthened in order to allow the hot gases to expand down to as near the atmospheric point as practical with an effi-

cient exhaust. It is common in stationary gas engine practice to make the stroke twice the diameter of the bore, but it is impracticable to increase the stroke of an automobile engine for the reason that the weight rises very rapidly with an increase in the stroke, and but little proportionately with an increase in the bore. Hence, the stroke seldom exceeds the bore more than a fraction of an inch, as the gain in power and efficiency is a negligible factor compared with the importance of keeping the weight down.

The A. L. A. M. formula does not take any account of varying lengths of stroke, for the simple reason that it is merely intended as a formula for "popular consumption," so to speak, and is only designed to give approximate results that may readily be calculated by anyone. To accurately compute the indicated horsepower of a motor a number of factors that do not appear in this formula must be employed. It is based on standards adopted from the characteristics of a number of American motors, and, as already mentioned, is merely an arbitrary rule for easy figuring.

EQUIPMENT OF NEW YORK-PARIS TOURISTS.

Editor THE AUTOMOBILE:

[1,207.]—Will you kindly, through "Letters Interesting and Instructive," let me know what comprises a Nansen kitchen and where it can be purchased. Also what make of windlass was carried by the De Dion auto in the New York-Paris run, as described in the last issue of "The Automobile."

Perth Amboy, N. J. G. W. TYRRELL, M.D.

The type of cooking stove to be used by the De Dion crew in the run to Paris is the development of one employed by Nansen in his Arctic explorations, and known in a general way as a Nansen kitchen. The stove uses kerosene under pressure as fuel, by means of a Primus burner without wick. Experiments have proved that kerosene is the only suitable fuel for this class of work, alcohol being entirely too bulky. The vessels connected with the kitchen are all of a special aluminum alloy comprising copper and nickel. This gives minimum weight and a metal which will not burn out under the greatest heat obtainable from the stove. As it is supposed that water will never be available, frozen snow being used in its stead, this is an important feature. These outfits are procurable from high-grade sporting goods dealers in New York City.

The De Dion car was fitted with a small capstan, not a windlass. It was mounted on a stout board and carried when not in use on the running board of the car. When required to be brought into operation it could readily be mounted on the forward end of the frame in front of the radiator. We do not know the name of the maker of the capstan, the features of which were smallness, low gearing and operation by a lever transmitting power on both upward and downward strokes.

HOW CAN THIS LINING BE RENEWED?

Editor THE AUTOMOBILE:

[1,208.]—The folding top of my car is Pantasote, lined with a dark cloth like broadcloth—vulcanized on. The outside is in good condition, but the inside cloth lining has faded to a dark purple. Can you tell me if there is any known method of dyeing the cloth lining—while attached to the wires—either with a brush, sponge, or other method, or whether there is any way to restore the color or otherwise make the lining presentable? GEORGE A. FAY.

Meriden, Conn.

While we must confess ignorance as to exactly the method to be pursued in making such a renewal, owing to lack of experience, we should advise sending the top to the manufacturer, as we do not believe it is a job at which an amateur would shine to any great extent. If there be any manner of doing this without removing the old lining, which we doubt, probably some manufacturer of tops will come to our assistance and tell how it can be done to the best advantage, and his letter will be reproduced in this column.

METHOD OF HARDENING CAM FACES.

Editor THE AUTOMOBILE:

[1,209.]—Will you kindly advise me, through your valuable paper, the best way to harden cams? W. E. GARRABRANT.

Dallas, Tex.

The process employed for this purpose is known as "cementing" or "case hardening," and it requires the facilities of a well-equipped shop to perform properly. The parts are packed in iron boxes with carbon, and then brought to a determined temperature, at which they are maintained constantly for a number of hours, depending upon how deep the carbon is desired to penetrate the metal. This process causes more or less distortion of the parts, so that they are only machine finished before being subjected to it, being subsequently accurately finished by grinding. Where there are no facilities for such work at hand, cams may be roughly hardened by tempering, as soft steel, no matter how low in carbon, will harden to a certain extent, when brought to a red heat and then plunged into water. Using brine will increase the hardening effect slightly.

WHO CAN ANSWER THIS DEFINITELY?

Editor THE AUTOMOBILE:

[1,210.]—Would it be asking too much of you to tell us whether you know of any marine engine builders who abandoned four-cycle engines for the two-cycle? Any information you might give us on the subject would be greatly appreciated. PUGH BROS.

Providence, R. I.

We do not know of any such instance, and thought the fact was quite to the contrary, the two-cycle engine having been given up in the majority of instances where extreme speed was aimed at, as in most of the high-powered racing boats. As many motor boat enthusiasts are numbered among the subscribers of THE AUTOMOBILE, doubtless some of them may be able to supply the information desired, or at least more than we are able to furnish.

MORE ABOUT A MOTOR'S IMPULSE BALANCE.

Editor THE AUTOMOBILE:

[1,211.]—I beg to disagree with your answer to letter No. 1,133, January 30 issue, "Balance of Four and Two-cycle Engines." With cranks at 180 degrees, I claim it is impossible for No. 3 cylinder to be balanced by compression stroke of No. 2 cylinder, as you state in your letter. It looks to me as though No. 2 might be on the suction stroke about that time and No. 4 on compression. O. H. COLWELL.

Providence, R. I.

You are quite right; cranks numbers two and three, being in the same plane, always move together and naturally could not balance one another. It should have read number *four*, which, as you state, would be on the compression stroke.

WANTED: VIEWS OF OTHERS ON LUBRICATION.

Editor THE AUTOMOBILE:

[1,212.]—I was very much interested in communication No. 1,181, in "Letters Interesting and Instructive," concerning experience in lubricating the Ford engine, as mentioned therein. I have had considerable trouble myself; however, it was voluntary, inasmuch as while my car was new I desired to keep it flooded with oil so that there would be no chance of any cutting going on in the cylinders. I must admit that the idea of mixing oil, kerosene, and radium decarbonizer, and using this as a mixture for the crankcase would seem rather queer. As near as I can judge, kerosene cuts lubricating oil and destroys its lubricating qualities, and again the radium decarbonizer I take to be very much the same thing, and probably if anything it acts more strongly than the kerosene. This I do not know from experience, but I am under this impression. It would seem to me, therefore, that the fact that this correspondent's engine does not give trouble is probably owing to the great volume of the mixture. The writer has found that by using a rather light grade of oil, in a fairly liberal manner, say 40 drops per minute, has given him fine satisfaction and no trouble.

I should like very much to have the views of some other owners in reference to letter No. 1,181, as, of course, if this really does give satisfactory results in every way, including thorough lubrication of the engine, it would certainly be a good thing to know.

Philadelphia, Pa. W. S. HEAGAMAN.

IN THE BEGINNING OF AMERICAN AUTOMOBILING

By CHARLES E. DURYEA.

THE first automobile racing event in America was due to the initiative and generosity of H. H. Kohlsaat, then proprietor of the *Times-Herald*, of Chicago. He was impressed by the showing in the great French event of the spring of 1895, and in June announced a series of prizes amounting to $5,000 and a small gold medal, to be given to the most meritorious in a three-day auto event, to be held about November 1, 1895. The matter was kept alive in the columns of his paper and public interest stimulated as much as possible so as to attract a large entry list. A prize was offered for the best name for the new vehicle and after much deliberation "motocycle" was adopted. The fate of the word has proven how little the committee understood either horseless carriages or the automobile vocabulary.

Inventors sprang up like weeds in many small places, and each was sure he had the device that would get the big prize or at least one of the small ones. Eighty-three entries were secured, some entrants engaging several vehicles. The *Monitor* was built in ninety days; surely the same American talent was equal to the task of making successful self-propelled carriages in four months. It looked then, as it often has since, very easy to put together a motor and a buggy and take a ride. But, alas, there were some disappointed inventors and discouraged event-promoters when the time arrived and but three or four vehicles were on hand. Pennington, of airship and other hot-air fame; Mueller, who had imported a Benz rig; Duryea and one or two others constituted the small group. The others were keeping the wires hot explaining that they were almost ready, etc., etc.

Charles E. Duryea and His Brother, J. Frank Duryea.

The car shown is the one which won the *Times-Herald* race of 1895, the first automobile race ever held in the United States. Charles E. Duryea is the pioneer of the American industry in this country, and J. Frank Duryea is the designer of the Stevens-Duryea car.

How the First Race Was Lost.

The management saw nothing else to do but postpone, and this they did, naming Thanksgiving day as the next date. To console those present and recompense them somewhat, an exhibition run of fifty-odd miles over the course was held for a purse of $500 to be divided equally among those who covered the course regardless of speed or time so long as it was in the same day. We could feel our half of that money bulging our pocket, for there was no real auto there that could cover that course in opposition to the Duryea, except the Mueller-Benz. It seemed so certain that the Duryea rig, which had been used by a green promoter all summer and had never been towed, would gambol over those fifty-odd miles on that beautiful Fall day in a most easy, pleasant manner, that my brother and I rode away with as much enthusiasm as a couple of school boys. We had a few spares and there did not seem to be anything likely to break that could not be repaired by either or both of us on the road if necessary. We ran away from the Benz and were going finely when our chain broke. This did not worry us, though it permitted the Benz to get ahead. We were soon after them and rapidly overhauling a German farmer driving a light road cart. There was ample room to pass him on the left, as was our duty according to law, but we sounded our warning to let him know we were coming. This ruined us, as these legal warnings have often done since. He looked around and seeing us coming "like a railroad train" (about 12 miles per hour) decided he must get out of the way, so he took a short hold on the lines and pulled the outfit across the road to the left. This blocked our way, and rather than hit him we glided into the ditch which looked easy, being full of grass. Our front wheels dropped nearly out of sight and both hubs gave way. The Benz got all the money; the Duryea all the disappointments.

The Duryea went to the factory by freight; but was again present on Thanksgiving day. Chicago was in the grip of a blizzard. Trains were late or abandoned. Pedestrians sank to the waist in some of the streets. Lincoln Park had not been traversed when the contestant's entered it. There were more entries, however, than on the first occasion. A show room at Sixteenth street and Wabash avenue served as headquarters, and as the streets became more passable, some demonstrations were given. Haynes had his second vehicle there. Morris & Salom had two electrics, which were the first of the long series of the Electric Vehicle Company. Lewis had a friction drive which he very carefully guarded. It was the predecessor of the Searchmont. In all there were eleven who took starting numbers. The weather had moderated enough to soften the snow on top but at night this froze into a crust hard enough to support pedestrians and sleighs. The next morning was snappy cold. A starting spot had been scraped free of snow in Jackson Park. Some of the starters arrived on trucks, some under tow and some, like the Haynes, did not arrive. Only five lined up. The Duryea had run out without trouble and seemed to be a good road breaker so it was sent off first. The others followed quickly, but as they came to the slight rise leading on to the old Midway Plaisance it was noticed that there was trouble. A run to the spot showed all but the Duryea stalled in the snow. Salom voiced the common sentiment when he said "It's against the rules to be pushed, but you had better lend us a hand, boys." So they were pushed and not only once but many times during the day.

Few Starters, Fewer Finishers in First American Race.

The course lay through the city and to the north, then back to the city and out northwest, then back to the start through the parks on the west side. Total distance 54 miles. The electrics were quickly out of it. The Macy Roger, a French rig, made a hard fight and covered probably forty miles. The Benz operator fainted from exhaustion but the rig was driven in by Chas. B. King, now of the Northern, and abandoned at the finish line. The Duryea had two small breakdowns,

one of which was distinctly traceable to the original accident, but in spite of the delay caused by these, it won the contest. Its operator drove back to the storeroom with no sense of physical exhaustion. It was the only rig to cover the course and transport itself both from and to its quarters on the same day. Total distance about 70 miles. Many modern rigs with their small wheels could not do such a feat. The first prize, $2,000 cash, was awarded to the Duryea, which for years was the only American rig that had proven able to defeat foreign-built vehicles. That this was not accidental, but a reality, was amply shown by other Duryea rigs winning the second American event at New York the next spring and by running away from the French victors of '96, in the Liberty Day run at London, on November 14, 1896.

The effect of this contest on the budding industry was peculiar. The inventors found themselves not ready even for the New York event, and many of them fell out, surprised at the severity of the problem and disgusted with its difficulties. The carriage makers came expecting to see carriages with a push-button on the seat and a door-bell battery under it. They found a whole power plant and went away convinced that it would never do for their trade. The cycle user could only see steel wheels and rubber tires, and condemned all else, and later got his fill of toys in the shape of the little steamers which he snapped at so eagerly when they were thrown on the market. The public generally were disappointed at the slow time made (because of the snow and the accidents, about 8 miles per hour), and ridiculed the performance and the promoters. The few thinking ones saw that it had answered for ever the question "What will they do in winter?" and had proven superiority over the horse. It had also confirmed the gasoline men's claims as to the superiority of gasoline motors for this work and those willing to see did not need another lesson.

Twelve years later we see the motor buggy just getting a very tardy recognition of its merits, and yet we, as a people, pride ourselves that we are up-to-date and can see through a ladder. There was enough in that first run to prove conclusively the value of the buggy type, but few could see it.

That Duryea rig weighed under 1,200 pounds. It had 44 and 48-inch wheels, with 2-inch hosepipe tires. The motor was a two-cylinder, four-cycle, located at the rear. It had three speeds forward and single chain drive to a live rear axle. Why the makers went to France for their models when the public have been all these years waiting for something like this is a question not very easy to answer.

GRAND PRIX TO BE GREATEST RACE EVER HELD

PARIS, March 1.—One hundred and five automobiles are officially engaged for the two races on the Dieppe course, July 6 and 7. Forty-five of these are entered for the Grand Prix, and 60 for the small voiturette contest on the preceding day. During the last twenty-four hours Brasier, who had been looked upon as doubtful, sent in the official entry of three cars, to be driven by Thery, Baras and Bablot; Itala put in a team of three, and Porthos, a French firm with factories near Paris, entered two cars. The 45 champions are distributed among six nations, France having 20, Germany 9, England 6, Italy 6, Belgium 3 and America 1. The firms represented are:

FRANCE.—Panhard (3), Motobloc (3), Dietrich (3), Renault (3), Bayard-Clement (3), Brasier (3), Porthos (2).
GERMANY.—Benz (3), Mercedes (3), Opel (3).
ITALY.—Fiat (3), Itala (3).
ENGLAND.—Austin (3), Weigel (3).
BELGIUM.—Germain (3).
AMERICA.—Thomas (1).

With the exception of the Italian Isotta-Fraschini team and the Swiss Martini cars, all the contestants in the voiturette race are French. As the ordinary entrance fee for the runabout race is the modest one of $100 per car, it is quite likely that the already long list will be still further increased by half a dozen late entries at double fee. Most of the firms engaged in the voiturette race are exclusive builders of small cars, the only exceptions being Isotta-Fraschini, Pilain, Martini and Aries.

In engagement fees the secretary of the Sporting Commission of the French Club has received $42,800, this sum covering 45 Grand Prix racers, 60 runabouts, 5 tire stations, one oil stand, and a reserve space for the Bosch Magneto Company. The Racing Board income is further increased by the Dieppe subsidy of $10,000, making already $52,800. This will, of course, be very largely augmented by advertising spaces on the course and grandstand admissions.

Expenses, however, in connection with a race of such magnitude will be enormous. It is estimated that grandstands and accessories alone will cost from $20,000 to $25,000. Over 38,000 yards of fencing have been ordered to protect the course at every cross road and wherever people are likely to congregate, and in addition 9,000 yards of solid wood barricading will be erected. The wooden bridges across the course will be the same as last year, and will be erected at the same places.

It is declared authoritatively in Paris that Kronprinz William will attend the Grand Prix races incognito. The matter is at present in the hands of the ministers of foreign affairs at Paris and Berlin, and appears likely to be brought to a successful termination.

THOMAS PARIS CHAMPION A STOCK CHASSIS.

It is not the Brighton Beach 24-hour racer which is taking part in the New York to Paris tour as the representative of America, but a stock chassis which had been promised for shipment to the Whitten-Gilmore Company, agents for the Thomas Company in Boston. No car was available, and on request the Boston dealers released this machine.

No changes whatever were made on the chassis, declare the Thomas people, other than a steel bar placed across the frame connecting the two front spring hangers. This was not added to strengthen the car, but to furnish a suitable attachment for a rope, should it at any time become necessary to hoist the car by means of block and tackle. The car had not been run or tested more than other Thomas Flyers.

MAXIM'S MUFFLING LEADS TO SILENT GUN.

HARTFORD, CONN., March 2.—Hiram Percy Maxim, who has been closely identified with the development of both the electric and the gasoline automobile from their very inception in this country, has just been granted a patent on a silent firearm, the invention of which he attributes to the result of long study of efficient methods of muffling the exhaust of a gasoline motor. The device consists of an automatic valve placed near the muzzle of the gun and which is closed by the pressure of the gases, once the bullet has passed, the remaining gases under pressure then being allowed to escape slowly through small perforations, giving rise to nothing more than a slight hissing, which is not audible more than a very short distance away from the gun.

A MILLION GRANGERS WANT FEDERAL ROADS AID

CONCORD, N. H., Mar. 2.—The National Grange, an organization of farmers in twenty-seven States, with an aggregate membership of nearly one million members, has for a number of years advocated the enactment by Congress of legislation creating a National Highways Commission and making liberal appropriations for the improvement of the public roads. During the past year the grange has perfected plans for conducting a widespread, systematic, educational campaign for the purpose of showing the urgent necessity for the adoption of a broad, comprehensive policy of public highway improvement by the various township, county and State authorities, and to induce the National Government to lend its assistance to a movement intended to secure the establishment of a complete system of properly constructed roads in all sections of the country.

It is contended by the members of the grange that the improvement of our highways is as equally deserving of Federal appropriations as is the improvement of our waterways, and that the work of the proposed National Highways Commission would greatly stimulate the construction of better roads by the various States, counties and townships. The splendid road system of France, admitted to be the best in the world, is declared to be due chiefly to the road policy of the French National Government, under which a corps of highly trained engineers plan and direct the work of constructing and maintaining the principal roads of that country.

The deplorable condition of most of the roads in the United States, probably the worst in any civilized country, is generally recognized, and it is urged by the grange that it is high time that action should be taken by the National Government to bring order out of the existing chaotic conditions and substitute a scientific policy of road construction and improvement for the haphazard methods which now prevail to so large an extent.

The following resolutions unanimously adopted by the National Grange give the point of view from which the farmers regard the question of Federal aid to public road improvement:

Whereas, The improvement of the highways of the country is a matter of general public concern, and should properly receive the attention and assistance of the National Government, and

Whereas, The revenue raised by taxes paid by the people of the country as a whole should be devoted as far as possible to purposes which will benefit the greater number of the taxpayers in all sections of the country, and

Whereas, No argument can be advanced in favor of the annual appropriations by Congress on behalf of river and harbor improvements that does not apply even more strongly to the improvement of our public roads; therefore,

Resolved, That the National Grange favors a general policy of good roads construction by the various municipalities, counties and States, and

Resolved, That we favor the immediate enactment of legislation by Congress making liberal Federal appropriations for the improvement of the public highways of the country, these appropriations to be expenses in such manner as Congress may prescribe.

House Bill 15837, introduced in Congress on January 30, 1908, by the Hon. Frank D. Currier, of New Hampshire, embodies the principle of creating a National Highways Commission and of Federal aid for public road improvement, unanimously approved by the National Grange at successive annual conventions and was carefully drawn to meet objections raised against previous bills for the same purpose.

By decisions of the Supreme Court of the United States it is held that the National Government has power to construct, maintain or improve roads in the various States used in interstate commerce, and all roads leading to or connecting therewith. It is therefore practicable under this bill for the proposed highways commission to aid in the construction or improvement of any road in any part of the country, since all roads connect with, or lead into, some other road used in interstate commerce.

It is provided in the bill that the commission shall, as far as possible, act in cooperation and consultation with the authorities having charge of the construction and improvement of the public highways of the several States, and in accordance with this provision the distribution of the amounts appropriated will be governed by the wishes of the people of the States, acting through their public road officials. Under this policy there will be no danger of some roads in certain sections of the country receiving more than their fair share of the Federal appropriation, since the people of each State can be relied upon to see that their highway authorities insist on the expenditure of these appropriations for the best interests of the States as a whole.

The bill also provides that not less than $500,000 out of the total appropriation of $50,000,000 shall be expended in each State of the United States, this amount to be expended in each State at the rate of not less than $100,000 annually. This insures the smaller States against discrimination in favor of the larger or more densely populated States, and will prevent anything like favoritism in the distribution.

The enactment of this bill will inaugurate a national policy of road construction and improvement which will ultimately result in giving the entire country a system of permanent public highways, constructed after the most scientific methods under the joint supervision of the National Highways Commission and the various township, county and State authorities. The engineers and construction staff of the commission and the appropriations made by Congress will be available for aiding in the improvement of any roads in any part of the country, and the roads so improved will be a constant inducement to each community to cooperate in making our road system what the wealth and intelligence of our people entitle us to have—the best in the world.

A Bill to provide for the creation of a National Highways Commission, and for the construction, improvement, and maintenance of public highways.

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That this Act shall include within its provisions any and all public highways within the territory of the United States which, in the judgment of the commission hereinafter created and constituted, might be constructed, improved, or maintained to promote interstate commerce and trade and the postal service of the United States.

Sec. 2. That a commission is hereby created to be called the "National Highways Commission," to consist of three commissioners. The President of the United States shall, by and with the advice and consent of the Senate, appoint three commissioners, who shall have a practical knowledge of road building and construction. Any vacancy which may occur in the commission shall in like manner be filled by the President; and he shall designate one of the commissioners to be president of the commission. Each of the commissioners appointed shall receive as pay and compensation for his services five thousand dollars per annum. The commissioners shall remain in office subject to removal by the President for inefficiency, neglect of duty, or malfeasance in office.

Sec. 3. That it shall be the duty of said commission to take into consideration, formulate, and adopt such plan or plans for the improvement, construction, and maintenance of such public highways, the improvement, construction, and maintenance of which shall, in the judgment of the commission, acting in co-operation and consultation as far as possible with the duly constituted authorities having charge of the construction and improvement of the public highways of the several States, promote and facilitate interstate

commerce and trade and the postal service. The said commission may, prior to the completion of all plans and surveys contemplated by this act, proceed to such immediate work as in the judgment of said commission may constitute a part of the general system of works herein contemplated.

Sec. 4. That it shall be the duty of said commission to superintend and direct such works as are herein contemplated, and to carry into full execution such plan or plans for the construction, maintenance, and improvement of public highways as may be devised and adopted by the commission as herein contemplated, and to make such additional surveys and investigations and mature such additional plan or plans and to carry the same into full execution as may be deemed necessary to construct, improve, and maintain a system of public highways, advantageous for the purposes of interstate commerce and trade and the postal service, and to accomplish the object of this act.

Sec. 5. That the commission herein constituted and appointed may cause proceedings to be instituted in the name of the United States in any court having jurisdiction of such proceedings for the acquirement by condemnation of any land, right of way, or material needed to enable it to maintain, operate, and prosecute works for the construction, maintenance, and improvement of public highways, for which provision has been made herein, and to construct, improve, and maintain such public highways. Such proceedings to be prosecuted in accordance with the laws relating to suits for the condemnation of property for a public purpose of the States wherein the proceedings may be instituted: Provided, however, That when the owner of such land, right of way, or material shall fix a price for the same, which in the opinion of the commission shall be reasonable, the said commission may purchase the same without further delay: And provided further, That the said commission is hereby authorized to accept donations of land, rights of way, or material required for the maintenance and prosecution of such work.

Sec. 6. That there is hereby appropriated, out of any moneys in the Treasury of the United States not otherwise appropriated, for the purpose of carrying out the provisions and objects of this act the sum of fifty million dollars. The sum of not less than five hundred thousand dollars out of such appropriation shall be expended in each State of the United States, said sum of five hundred thousand dollars to be expended in each State at the rate of not less than one hundred thousand dollars a year. The said appropriation of fifty million dollars to be available at the rate of ten million dollars a year during the years nineteen hundred and eight, nineteen hundred and nine, nineteen hundred and ten, nineteen hundred and eleven, and nineteen hundred and twelve. If any of the appropriation herein made is not expended in the year named that portion not expended shall become available in the succeeding year or until expended.

Sec. 7. That the commission herein created and constituted shall superintend, control, and expend for the purpose of this act all appropriations herein made, or which hereafter may be made for said purposes, or so much thereof as shall be necessary, and shall prepare and submit through the president of the commission, to be by him transmitted to Congress at the beginning of the regular session in December of each year, a full and detailed report of all its proceedings and actions and of all such plans and systems of work as may be devised, in progress, or carried out by it, and of all such additional plans and systems of work as may be devised, matured, and adopted by it, with full detailed estimates of the cost thereof, and a statement of all expenditures made by it; and the Secretary of War may detail from the Corps of Engineers, or other corps of the army, an officer or officers to aid them in their work, who shall serve without additional compensation to that now allowed by law; and all moneys hereby or hereafter appropriated shall be expended under the direction of the Commission in accordance with the plans, specifications, and recommendations formulated, matured, and adopted in accordance with the provisions of this act.

Sec. 8. That this act shall be known as the "National Highways Act," and shall take effect at the expiration of thirty days after its passage by Congress.

THAT IRIDESCENT DREAM OF A TRANSCONTINENTAL AUTOWAY

INTEREST has been aroused in automobile circles by the movement started by ex-Congressman William J. Coombs, former director of the Union Pacific Railroad and president of the Municipal Art Society of New York, to obtain a general expression of the sentiment of the country in regard to having the United States government build a great transcontinental railway from the Atlantic to the Pacific ocean, on part of which public highway it is also proposed to construct a transcontinental automobile road, extending from ocean to ocean.

Mr. Coombs disclaims any intention to have the government operate the road, but simply to furnish trackage which can be availed of by any existing road or roads to be hereafter constructed, or by any freighter by the payment of tolls and compliance with general regulations. A reason for this movement, as urged by Mr. Coombs, is that there is not available capital enough in the country to provide trackage to meet the growing wants of its commerce.

It has been suggested to Mr. Coombs that the automobile interests of the country were very large, and that this scheme of a great transcontinental railway might be made more attractive, provided that upon this strip of land a great national automobile road could be constructed.

Mr. Coombs says he has had some hesitation in proposing such an automobile road, as it might savor of a bid for the support of particular interests. At the same time, he recognizes the fact that automobiles have come to stay, and that everything that would divert their traffic from the ordinary roads of the country would be of great benefit to the country in general, while the comparatively small amount of land required for the construction of this automobile road would be no hindrance to the construction of the proposed trackage. In fact, in deciding upon the amount of land required, Mr. Coombs had had this in mind. Mr. Coombs goes on to say:

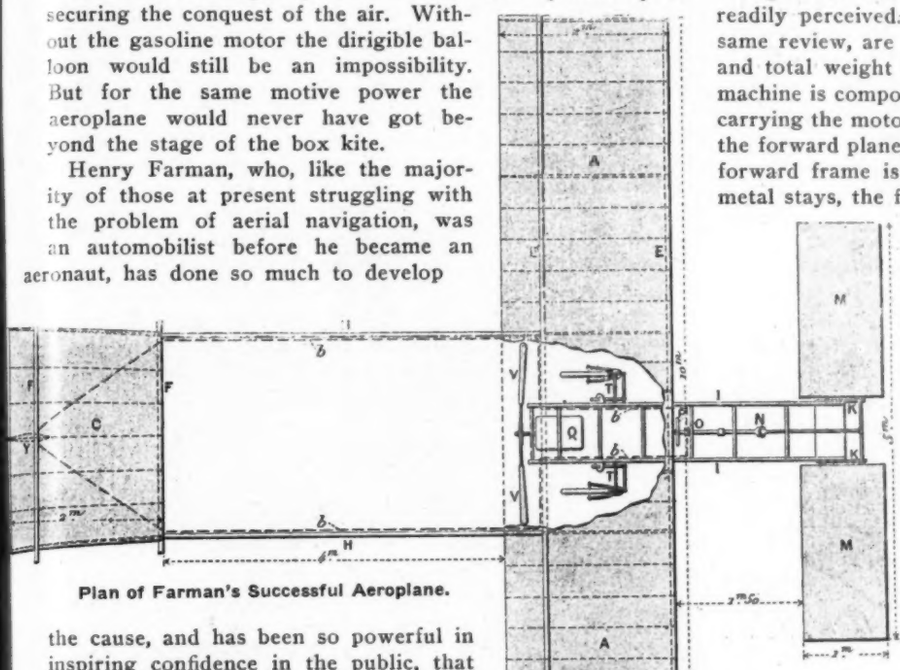
"The use of this automobile road would, of course, be under the same regulations as far as tolls and general management is concerned as the railroad. Private enterprise would provide for supply stations and hotel accommodations. The variety of country and scenery that would be embraced in a trip across the continent over such a road could not be duplicated in any country in the world. The location of the automobile road upon the strip of land would be upon the edge of it so as not to interfere with the main feature, to wit, the necessities of the railroad. This transcontinental railway could be built by the government much more economically and with less wastage to the resources of the country than by private enterprise. As to the route, after many years of thought on the subject, I have decided that the route which would most effectively serve the greatest interests of the country lies along the parallel of 42 degrees, from the Atlantic to the Pacific ocean, or as near that as the physical conditions would permit. The road would extend across the States of New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Iowa, Missouri, Nebraska, Colorado, Utah, Nevada and California. Under the provision of the constitution providing for postroads and military roads, the government would be authorized to condemn a strip of land approximately one-half mile in width over the whole distance of the main line upon which sufficient trackage could be laid as the wants of the country called for to provide for fast trains, slow trains, and sidings. I would avoid as far as possible the touching of cities where the terminals and right of way would be expensive. As to the extraordinary amount of land that this plan would call for to condemn and the great expense to be incurred, that is a matter of no consideration in view of the great interests involved."

Evidently Mr. Coombs overlooks the fact that railroads derive their support from the country through which they pass as well as the large cities comprising their terminals, though his proposal to avoid cities might be subject to modification, particularly as he states that the cost of carrying out the work is immaterial in view of its importance.

FEATURES OF THE WORLD'S MOST FAMOUS FLYER

BETWEEN the automobile and the flying machine there is a much more intimate connection than is generally supposed by the public, which sees in the one a means of locomotion over highways and in the other a possibility of securing the conquest of the air. Without the gasoline motor the dirigible balloon would still be an impossibility. But for the same motive power the aeroplane would never have got beyond the stage of the box kite.

Henry Farman, who, like the majority of those at present struggling with the problem of aerial navigation, was an automobilist before he became an aeronaut, has done so much to develop



Plan of Farman's Successful Aeroplane.

the cause, and has been so powerful in inspiring confidence in the public, that the machine associated with his victory is worthy of more than passing attention. The Wright Brothers may have performed more, but they have failed, owing to their secretive operations, to inspire confidence in the general public.

To obtain an understanding of the Farman machine, it should be borne in mind that it, like all other aeroplanes, is of the heavier than air class, that it has no sustaining gas bag, and that it can only remain afloat so long as it is in motion. Three fundamental principles underlie all machines of this nature: The effort of the wind or the motor necessary to raise the aeroplane decreases with the increase of the bearing surface and the decrease of weight; power of rising in the air increases with the force of the wind or the speed with which the apparatus is driven through the air; in proportion as the angle of attack is decreased (the angle formed by the horizontal and the line of travel of the aeroplane) the power necessary to keep the apparatus afloat is diminished. An aeroplane should thus have a big bearing surface, should be light and should have a rapid rate of travel.

From the accompaning drawings, reproduced from *Omnia*, the general characteristics of the Farman aeroplane are readily perceived. Overall measurements, according to the same review, are 44 feet long, 32 feet wide, 118 inches high, and total weight in running order 1,168 pounds. The flying machine is composed of five distinct parts: the forward frame carrying the motor and pilot, the chassis or supporting frame, the forward plane, the uniting beam, and the rear plane. The forward frame is a kind of wood cradle strengthened with metal stays, the function of which is to carry the motor, the pilot and all operating mechanism.

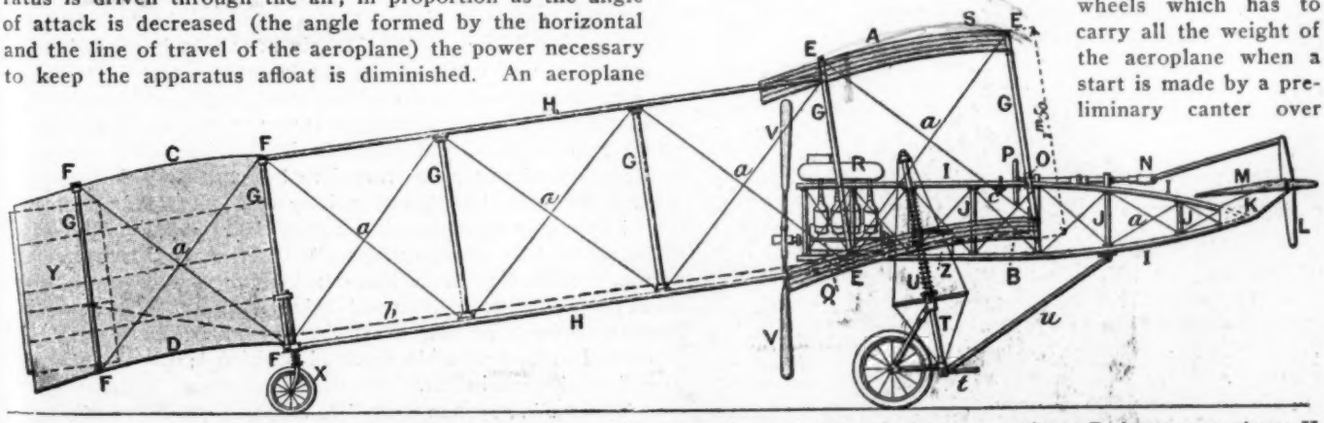
At the front of the forward frame is what is known as the equilibreur, a double rectangular plane, the angle of which may be varied at the will of the operator. It is by the variation of this angle that the aeroplane is made to rise or descend, as desired. Normally the flying angle of the Farman machine is seven degrees. Lateral movement is obtained by the vertical plane at the rear of the apparatus, the principle being that of a boat's rudder.

Aeroplane Piloting Is Complicated.

Though the steering wheel is in external features identical with that of an automobile, its operation is not the simple one known to every driver of a car. The "driver" of an aeroplane has to steer in three directions: length, width and height. The steering wheel slides toward or away from the driver, thus raising or lowering the equilibreur by the simple transmission shown in drawing. By turning the steering wheel to right or left lateral movement is transmitted to the rudder through the flexible cable *b* winding round the drum *O*.

The motive power of the aeroplane consists of a 50-horsepower eight-cylinder water-cooled Antoinette motor running at 1,050 revolutions a minute, and capable of driving the aeroplane at a speed of 40 miles an hour. The two-bladed propeller has a diameter of 90 inches and is constructed of aluminum. A rising movement is obtained as soon as the speed reaches 36 to 40 feet a second.

Steel tube is used exclusively for the chassis, designated in the sketch by *T*. It is this chassis, equipped with bicycle wheels which has to carry all the weight of the aeroplane when a start is made by a preliminary canter over



Elevation of Farman's Aeroplane.—A, upper forward plane; B, lower forward plane; C, upper rear plane; D, lower rear plane; H, steel frame uniting forward and rear cells; I and J, forward frame carrying motor and pilot's seat; M, equilibreur; O, steering wheel operating rudder and equilibreur; Q, 50-horsepower, eight-cylinder Antoinette motor; R, water tank; S, gasoline tank; T, chassis on which steering wheels are mounted; U, springs; V, aluminum propeller; X, rear wheels; Y, rudder; Z, pilot's seat on storage battery case; b, cable operating rudder; c, ignition control.

the ground. The wheels are pivoted to run on the ground at any angle and are necessarily subjected to severe strains when the 1,000-pound apparatus descends to earth; yet so satisfactory is the construction that after more than 300 descents the chassis and wheels are in perfect condition. The pair of wheels at the rear, also mounted on coil springs, are merely intended to prevent the tail dragging on the ground during preliminary runs.

The forward cellular bearing surface, which may be compared to the wings of a bird, is formed by two long, curved surfaces of varnished canvas, parallel and about 60 inches apart. A dozen bamboo uprights unite the two surfaces, and laths at short intervals support the canvas covering. The two bearing surfaces are curved in length and width, this form offering a certain resistance to the escape of the air and thus increasing the sustaining power of the aeroplane.

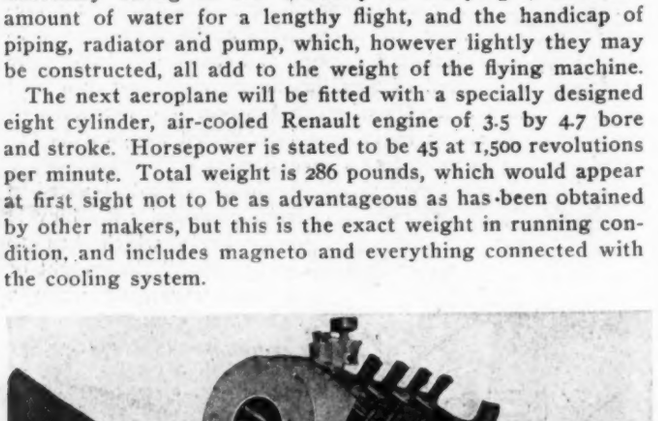
Four tubes, reinforced by uprights and wire stays, unite the forward cell to the rear cell or tail, the function of which is to act as a counter weight or ballast of the forward part. It may, with considerable accuracy, be compared to the tail of a kite. This rear cell is much smaller than the forward one, the width being only 8 feet instead of 32. Its four lateral surfaces are covered with varnished canvas, the front and rear being left open to allow the free passage of air.

It is this huge box kite, equipped with a gasoline engine and manned by an automobilist, that has proved to the world the possibility of aerial navigation. Farman, who has the additional distinction of having achieved success on his very first flying machine, believes with all aeronauts that the ultimate complete conquest of the art of flying is but a matter of time. Unlike many untamed enthusiasts, however, Farman realizes present limitations; his machine has flown, and flown over such distances as to prove its worth, but the flights were only the feeble efforts of a fledgling.

RENAULT AIR-COOLED ENGINE FOR FARMAN.

Henry Farman, the champion of the aeronautical world, announces that his new aeroplane will be fitted with an air-cooled engine, instead of the eight-cylinder water-cooled motor used for some time past. He has found a change necessary owing to the difficulty of carrying a sufficient amount of water for a lengthy flight, and the handicap of piping, radiator and pump, which, however lightly they may be constructed, all add to the weight of the flying machine.

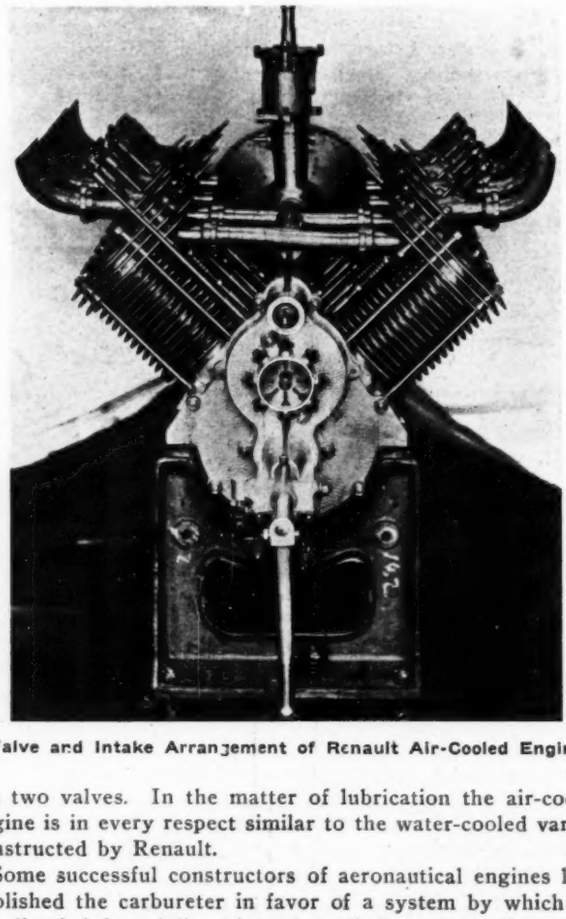
The next aeroplane will be fitted with a specially designed eight cylinder, air-cooled Renault engine of 3.5 by 4.7 bore and stroke. Horsepower is stated to be 45 at 1,500 revolutions per minute. Total weight is 286 pounds, which would appear at first sight not to be as advantageous as has been obtained by other makers, but this is the exact weight in running condition, and includes magneto and everything connected with the cooling system.



Eight-Cylinder Renault Aero Engine for Farman.

The eight cylinders, provided with radiating flanges over the entire length of the combustion chamber, are arranged in V, the two groups of four being disposed in such a manner that two connecting rods are attached to one throw of the crankshaft. This arrangement reduces the length of the crankshaft, diminishes weight, and, though there is no fly-wheel, the engine is perfectly balanced. Except that they are somewhat lighter than usual, the pistons are similar to those used on the standard water-cooled engines, and are fitted with the same circular groove in their base, pierced with holes to prevent oil passing from crankcase into combustion chamber.

All valves are operated by a single camshaft, machined out of the solid. The exhaust valves, placed above the inlet valves in order to obtain a higher compression, are operated by overhead rocker arms. Spark plugs are placed between



Valve and Intake Arrangement of Renault Air-Cooled Engine.

the two valves. In the matter of lubrication the air-cooled engine is in every respect similar to the water-cooled variety constructed by Renault.

Some successful constructors of aeronautical engines have abolished the carbureter in favor of a system by which the gasoline is injected direct into the cylinders. According to the Renault engineers, the slight gain in weight is offset by the irregularity of working and the largely increased consumption. More gasoline being consumed, a greater quantity has to be carried, necessitating a larger tank and thus making the two systems equal on the basis of weight. The standard Renault carbureter has therefore been retained, but considerably lightened by being entirely constructed of aluminum.

In the matter of ignition, too, a little weight might have been saved by adopting dry cells or storage batteries, but it was preferred to use a high-tension Bosch magneto, similar in principle, but smaller and lighter than those used on the cars. As can be seen from the illustration the magneto is carried in an accessible reversed position below the forward end of the crankshaft.

The cooling system comprises a couple of fans revolving in a light metal casing covering the entire engine. The cooling air drawn into the housing by the forward opening completely encircles the engine and is driven out at the rear. The two cuts of the engine show it with and without metal casing.

SOME AMERICAN TAXICABS.

The production of taxicabs, a field of activity with enormous possibilities, is now receiving very close attention by some of the more important and best equipped American factories. Vague announcements regarding intentions of building this special type of automobile have not been lacking for the past six months, but it is during more recent days that the actual cars have made their appearance.

The H. H. Franklin Manufacturing Company has entered the taxicab field, naturally with an air-cooled car. The town vehicle is built on the Franklin 16-horsepower chassis, which has a four-cylinder engine with jump spark ignition, current being supplied from a storage battery. Wheelbase is only 92 inches, which makes the car an especially easy one to handle in crowded city traffic. Transmission is of the progressive type, and final drive through rear live axle, as in all Franklin models. A landaulet body, elegantly upholstered in soft black morocco, the most sanitary material for public service, is provided for taxicab service, the model being known as G landaulet. A number of these cars are now being tested in public service. One of their most valuable features is their low weight and consequent low tire and gasoline upkeep. The machine is declared to weigh but 1,850 pounds.

Chicago will receive the first of the Elmore taxicabs now under construction. The standard 24-horsepower chassis, with its wheelbase shortened to 102 inches, has been adopted. The power plant is a three-cylinder two-cycle valveless engine capable of driving the cab on a gearing of 3 1-2 to 1, at speeds varying from 4 to 30 miles an hour. Total weight of the taxicab is declared to be less than 2,300 pounds. Provision has been made in the landaulet for three inside passengers. The inside height of the body is 60 inches, and width 40 inches. Between the front and rear seats the width is 27 inches. Upholstering is furnished either plain or in biscuit pattern, in cloth or leather. Arm straps are provided, the doors are opened by inside latches, and both the front and door windows are of the drop pattern. The regular color of the Elmore taxicab is dark green with a light, red stripe.

In the new Northern coupé, the Northern Motor Car Company, of Detroit, Mich., has produced an elegant town vehicle to compete with the electric for silence and flexibility while having all the endurance powers of the high-grade gasoline automobile. The power plant is a 24-horsepower motor under a bonnet forward, and is remarkable for its silent operation. The change speed lever has been placed under the steering wheel in order to group all the operating mechanism and give easier control for city work. The body is a handsome example of the coachbuilder's art. It has large, roomy doors, wide seats, is comfortably upholstered, has adjustable beveled plate glass windows front and rear, and is lighted by an electric dome light. The standard finish is black, handsomely striped.

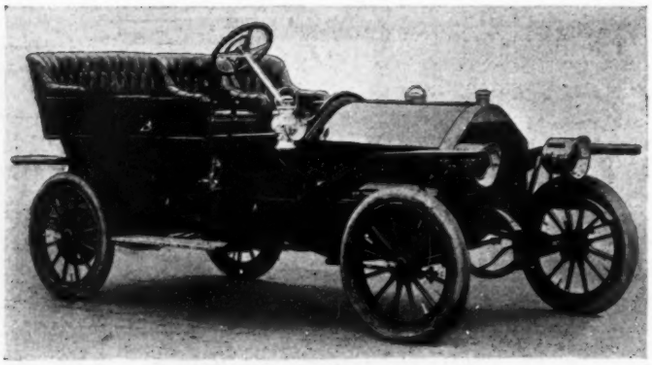
One of the first firms, either here or abroad, to enter the field with an air-cooled taxicab is the Oscar Lear Automobile Company, builders of the Frayer-Miller car. The taxicab is fitted with the Frayer-Miller 24-horsepower air-cooled engine, its cylinders measuring 4 1-16 by 5 1-8 inches bore and stroke. Flexibility being a primary requirement of a taxicab, the Frayer-Miller has been geared so that practically all its work may be done on the high gear. The Standard Roller Bearing Axle Company's axle of the heaviest type, with sliding gear transmission as an integral part of the axle, has been employed. This provides three speeds forward and reverse. Wheelbase is 100 inches, tires employed are 32 by 4 inches. The Frayer-Miller patented fenders are employed, as will be seen from illustration, in order that the body of the vehicle may be thoroughly protected from mud. Accommodation is provided for four passengers, two on the rear seats and two on the forward drop seats.

Franklin Taxicab, Champion of Air-Cooled School.

Two-Cycle Engine Feature of Elmore Taxicab.

Comfortable Enclosed Auto From Northern Factory.

Frayer-Miller Promised For New York Taxicab Service.

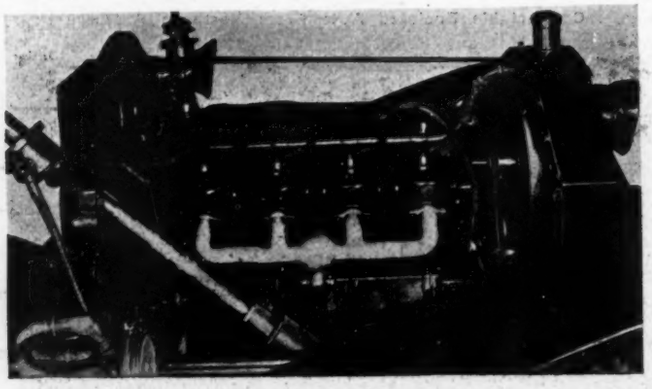


A Texas Automobile Product, the "Dixie."

TEXAS ENTERS THE MANUFACTURING FIELD

From out the southwest come two new claimants for honors in the moderate priced class, and to judge from their specifications, there is little doubt but that they will succeed in carrying them off. To be more definite, they are the "Dixie" and the "Dixie Flyer," and they hail from Houston, Tex., where the Southern Automobile Company is a pioneer firm in this line. Both cars are built on the same chassis so that a description of the Dixie, which is a touring car, as will be evident from the accompanying photograph, will suffice in large measure for both. Its power-plant consists of a 28-30 horsepower, four-cylinder, four-cycle motor of standard design and construction, carried directly upon the main frame, no sub-frame being employed. It is also equipped with standard accessories of high-grade, a Schebler carbureter with piston throttle, being fitted, while an approved type of force-feed lubricator takes care of this essential. Ignition is of the high-tension type, a six-volt, 60-ampere hour battery being supplied as part of the regular equipment.

The clutch is of the multiple-disc type, contained in the flywheel, while the gear set is of the sliding type acting on the progressive method, a departure being noted here in that only two forward speeds are provided. On the high, the car is geared 3.2 to 1, and on the low 6.6 to 1, or about the same as the intermediate ordinarily used, the flexibility of the motor, which gives the car a speed of from 4 to 50 miles an hour on the high, being depended upon to take care of any other changes. Final drive is by propeller shaft. The front axle is tubular with a three-inch drop, while the front hubs are equipped with ball-bearings. Two sets of brakes centered on drums on the rear wheels are fitted, being of the internal expanding and external contracting type. The wheel-base is 102 inches and the tread standard. The tire equipment consists of 32 by 3 1-2-inch tires on all four wheels and any standard make of clincher tires will be supplied. A 15-gallon fuel tank is fitted. Both types list at $1,500, with tools and oil lamps. Gas lamps and speedometer are $150 extra.



Intake Side of the Motor of the "Dixie."

GOGGLES FOR DRIVING IN SNOW AND RAIN.

As all automobilists are aware, nearly every type of goggle yet invented has unfortunately to be abandoned when it is desired to drive fast through rain or snow. If the goggles are retained it soon becomes impossible to see through them, and if they are abandoned the driver suffers much inconvenience, the effect of rain or snow on the eyes at any speed above 25 miles an hour being painful.

To overcome this inconvenience a French inventor has produced a special type of goggle known as the L. I. M., an illustration of which is shown herewith, but which can be more completely understood by a reference to the line drawing, reproduced from *L'Automobile*.

The goggles consist of two opaque tubes *a* joined at the forward end so as to be convergent. The two tubes are mounted on the usual soft leather guard designed to fit close to the face, so that no currents of air can penetrate to the eyes. The upper half of the face of each tube is closed by

Sectional View of L. I. M. Rain-proof Goggle.

an opaque plate *d*, leaving the lower half open. To increase the range of vision the lower surface of each tube is cut away. Within each tube and behind the forward shield is a second inclined opaque shield *e"* and a glass shield *f*, there being sufficient open space between *e* and *f* to give the neces-

Goggles Designed to Protect Against Bad Weather.

sary range of vision under all ordinary circumstances. This range of vision is increased in wet weather by another range through the glass *f*, giving a view of the dashboard, bonnet and wheels of the car.

Protection against rain is obtained in the following manner: rain falling on the shield *d* in the direction of the arrow, or in a more or less oblique direction, drips down to the lower edge of *d;* under the combined influence of the wind and their own weight, the drops of rain are detached from *d* and carried inward until they strike the lower inclined glass shield *f;* then run down the surface of this to the lower part of the tube and finally escape through a hole *h* made for this purpose. In the rare case where a drop of rain managed to pass through the opening between the two guards, its rate of travel would be so slow that it would not reach the eye. Three different types of goggles are made with ranges of vision for speeds of 90, 40 and 25 miles an hour.

New Stretch of Shell Road Built for Savannah Races.

Homestretch from Grandstand—Trees to Be Removed.

ALL READY FOR SAVANNAH.

SAVANNAH, March 2.—In making every effort to secure the complete success of the two-day races on March 18 and 19, the Savannah Automobile Club has in view the obtaining of the Vanderbilt Cup race for its short but excellent course. The receipt of the news that the Racing Board of the American Automobile Association has instructed Chairman Jefferson DeMont Thompson to investigate the claims of St. Louis and Savannah has increased interest in the approaching event and decided the club to leave no stone unturned to secure the great international speed contest. Data are being collected to submit to Mr. Thompson in favor of the Georgia course, the first batch of information being obtained from the official in charge of the weather bureau, who shows from the records of the past thirty-six years that Savannah October weather is the best in the country. Other information being collected relates to accommodation, transportation facilities, etc.

Preparations for the March races are well advanced. The grandstands are almost completed, most of the curves have been banked and the course has been resurfaced wherever necessary. Provision has been made for warning signs along the road, thirty telephone stations have been provided for, and it has been decided to engage sixty flagmen, in addition to the military, for use during the two days of the races. The concession for a 64-page program has been awarded to J. Schreyer, of New York.

Entries are still being accepted for the Savannah meet on March 18 and 19, the controlling body having decided, in view of the intention of Ormond participants to stop at Savannah on their way North, to grant an extension to March 10. A number of manufacturers who for various reasons had been unable to put in an entry on the official closing date give assurance of cars being engaged.

For the 360-mile race open to stock chassis not exceeding 575 cubic inches piston displacement seven cars are now engaged. Michener will drive the Lozier, which ran in the Brighton Beach twenty-four hour race last summer; Harding and Poole will each have an Isotta-Fraschini; George Robertson and Herbert Lytle, of Vanderbilt Cup fame, will each pilot an Apperson Jackrabbit.

An Acme "sextuplet" runabout will be driven by Malcolm Newstetter, and an American runabout has been entered without nomination of driver.

For the 180-mile runabout race to be run on March 18, there are five entries, comprising two Thomas Detroit, to be driven by L. B. Lorrime and Oliver Light; an Apperson runabout, to be handled probably by George Robertson, and a Pennsylvania, to be driven by L. Zengel.

For the third event, now known as the Southern High Power Car Race, three cars are entered: Harry Levy's 120-horsepower Hotchkiss, a six-cylinder Stearns to be driven by F. W. Leyland, and a six-cylinder Thomas Flyer with G. S. Salzman at the wheel.

Looking East from the City Hall, Savannah, Ga., Showing River and Cotton Export Business Quarter.

BOOKS FOR AUTOMOBILISTS.

Touring Through England.—Merely because of its numerous excellent colored plates, Thos. D. Murphy's "British Highways and Byways from a Motor Car," published by L. C. Page & Company, Boston, is worthy a place on the book shelves of every automobilist. The author cannot be accepted as the only necessary guide for a tour through England—and indeed frankly states that he has no such pretension—for his journeys appear to have been a series of wanderings selected on the spur of the moment, often running over the same road twice and frequently leading through uninteresting industrial country where fairer routes were available. Nevertheless, the story of how Thomas D. Murphy piloted his Winton Model C through the highways and byways of Old England is sufficiently attractive to interest stay-at-homes, and his descriptions of scenes and customs in various parts of England cannot but be pronounced accurate by the traveler; even the apparent aimlessness of the travels is valuable because of the new scenes which are introduced.

Scotch Castles and Keeps.—There is such a wealth of romance and adventure in the land of the Scot that any literary effort on the castles of the north country has full possibilities of attractiveness. Frank Roy Fraprie, in his "Castles and Keeps of Scotland," has certainly lived up to his opportunity, the principal architectural monuments throughout the Lowlands and the Highlands being described in a way that makes the volume valuable as a companion and guide for a tour through this land. The mere mention that the book is published by Page & Company, of Boston, uniform with their well-known volumes on touring in France, is sufficient guarantee of the excellence of its illustrations and artisticness of its get-up. The addition of an outline map would doubtless have been appreciated by readers not fully acquainted with the geographical positions of the places described.

"The Gas Engine" Revised.—There are few better authorities on the internal combustion engine than Professor Frederick Remsen Hutton, of Columbia University, and engineers will be interested to learn that John Wiley & Sons, New York, have just brought out an enlarged and thoroughly revised edition of his well-known work, "The Gas Engine." Professor Hutton has made a most exhaustive study of the internal combustion motor of every type, extending over a long period of years, so that his work is the result of practical experience that has been contemporaneous with the development of the gas engine in commercial use. Every possible phase of the subject is dealt with and expounded at length and one of the features of the book that will make it invaluable to automobile engineers as a reference work, is the great mass of authentic data that it contains. It is a volume of close to 600 pages and within its covers will be found the entire history and development of the internal combustion from its very inception, written in a practical and concise manner. It lists at $5.

AERO CLUB OF AMERICA SEEKS AERODROME.

In a short time it is expected that the members of the Aero Club of America will have an aeronautical ground on which they may make experimental flights in the neighborhood of New York City with a reasonable amount of privacy and seclusion. Arrangements are now in the hands of the Board of Directors for securing such a ground where members may test their models with security to themselves and no danger to the property of others. A reasonable guarantee will be required from those who are testing their machines in order to safeguard public property.

A few places yet remain at the annual banquet of the club at the Hotel St. Regis, March 14. Members are at liberty to invite guests and the tables will be arranged each to accommodate parties of eight persons.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows and Meetings.

Mar. 7-14.....—Boston, Mechanics' Building and Horticultural Hall, Boston Automobile Dealers' Association. Chester I. Campbell, manager, 5 Park Square.
Mar. 11.....—Boston, Bay State Auto Association Clubhouse, First Quarterly Meeting, Society of Automobile Engineers.
Mar. 9-14.....—Buffalo, Convention Hall, Sixth Annual Automobile Show, Automobile Club of Buffalo. Dal H. Lewis, manager.
Mar. 23-28.....—Indianapolis, Ind., Annual Show, Automobile Dealers' Association.
Mar. 18-21.....—Rochester, N. Y., New Convention Hall, First Annual Show, Automobile Dealers' Association and Rochester Automobile Club. Bert Van Tuyle, manager.
Mar. 18-24.....—New Haven, Conn., Music Hall, Annual Show, New Haven Automobile Dealers' Association.
Mar. 21-28.....—Toronto, Canada, St. Lawrence Arena, Automobile Show. R. M. Jaffray, manager.
Apr. 5-12.....—Montreal, Canada, Arena, Third Annual Automobile and Sportsman's Show. R. M. Jaffray, Mgr.
April 6-8.....—Denver, Mammoth Rink, Annual Automobile Show. G. A. Wahlgreen, manager.

Race Meets, Hill Climbs, Etc.

Mar. 18-19.....—Savannah, Ga., Savannah Automobile Club.
April 24.....—Briarcliff Trophy Race, Westchester County, N. Y. Robert L. Morrell, chairman.
May 4-5.....—Harrisburg-Philadelphia and Return, 150-mile Endurance Run, Motor Club of Harrisburg.
May 15.....—Chicago, Algonquin Hill Climb, Chicago Motor Club.
May 16.....—Hartford, Conn., 200-mile Endurance Run, Automobile Club of Hartford.
May 30.....—Bridgeport, Conn., Sport Hill Climb, Bridgeport Automobile Club.
June 24-27.....—Chicago, 1,200-mile Reliability Run, Chicago Motor Club.
July 6-8.....—Buffalo, National Convention of the A. A. A., and Start of Fifth Annual Tour.
Sept. 14.....—Chicago, Annual Economy Run, Chicago Motor Club.

FOREIGN.

Shows.

Mar. 21-28.....—London, Agricultural Hall, Cordingley's Show.
Mar. 26-April 4.—London, Olympia Industrial Vehicle and Motor Boat Show.
May 17-June 2..—Moscow, Russia, International Automobile Exposition, Automobile Club of Moscow.

Race Meets, Hill Climbs, Etc.

April 1-13.....—Monaco Motor Boat Races and Motor Boat Exhibition, International Sporting Club of Monaco.
April 25-May 25—Industrial Vehicle Competition, Automobile Club of France.
May.....—Paris, Competition for Agricultural Automobiles, auspices of "L'Auto." (Date to be announced.)
May 1-31.....—Automobile Taxicab Competition, France, Automobile Club of France.
May 10.....—Sicily, Targa Florio, Automobile Club of Italy.
June 1-18.....—Reliability Trials for Pleasure Cars, Automobile Club of Great Britain.
June 9-17.....—Touring Competition for the Prince Henry of Prussia Prize, Germany, Imperial Automobile Club of Germany.
July 6.....—Voiturette Grand Prix, Dieppe Circuit (Automobile Club of France).
July 7.....—Grand Prix of Automobile Club of France, Dieppe Circuit.
July 13-17.....—Ostend, Belgium, International Race Week, Automobile Club of Ostend.
July 20-30.....—Ardennes Circuit Races and Coupe de Liederke, Automobile Club of Belgium.
Aug.....—France, Coupe de la Presse, Automobile Club of France. (Exact date to be announced.)
Aug. 29-30.....—France, Mont Ventoux Hill Climb, Vaucluslen Automobile Club.
Sept. 1-8.....—French Voiturette Contest, auspices of "L'Auto."
Oct. 11.....—Berlin, Germany, Gordon Bennett Balloon Race. Aeronautical Club of Berlin.

LONG ISLAND TEST PROVES AUTOMOBILE ECONOMY

AIR-COOLERS won the honors in the mid-winter economy test of the Long Island Automobile Club, February 25. Harry H. Knepper's 24-horsepower Frayer-Miller was found by the gasoline and fuel committee to have transported its passengers from the Brooklyn clubhouse to Montauk Point and return at the lowest cost per head, and was awarded the first prize. The Franklin, handled by H. A. Vail, used less gasoline than any car on the run, but as it carried only four passengers the cost per head worked out higher than for the Frayer-Miller, and the air-cooler from Syracuse had to take second position. R. Morton brought the four-cylinder Pullman home in third position and had the honor of driving the most economical of the water-cooled cars. The two-cylinder Maxwell, though not a prize winner, ran the leaders very close, and was just as hard pressed by the four-cylinder Pope-Hartford, which lost on oil what it gained in gasoline.

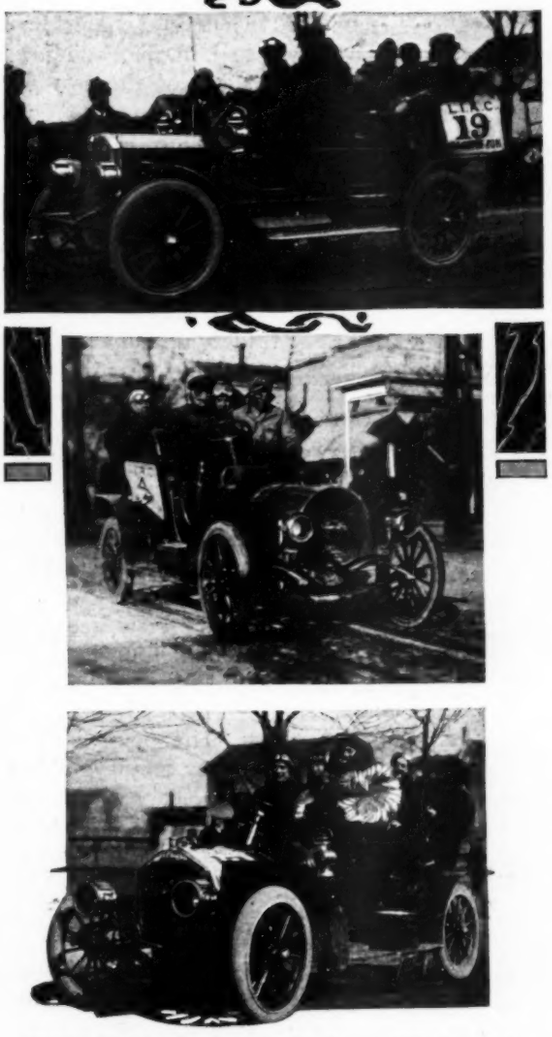
The most noteworthy feature of the 234-mile mid-winter run was the extreme economy displayed by the greater part of the nineteen cars qualifying within the time limit. The winning Frayer-Miller, with five persons on board, had a total cost for fuel and lubricating oil of but $3.56, or 71 1-5 cents per head. The Franklin's cost was the lowest of the competition, totaling only $3.10; as this sum had to be divided by four, the cost worked out at 77 1-2 cents per head. Ten out of the nineteen cars accomplished the run at a per capita cost of less than one dollar, and eight others kept the cost below two dollars. Calculations were based on gasoline at 25 cents per gallon and lubricating oil at $1 per gallon.

Among the seven-passenger cars the best performance was made by H. A. Martin's American Mors, with a cost of only 92 cents per passenger; the economy is the more remarkable in view of the fact that the Mors was a closed limousine with wind shield and all accessories for winter touring. Of the six-cylinder contestants, C. A. Carlson's Winton was the most economical, with a per capita cost of 97 3-7 cents per head. The oil consumption was remarkably low, being but seven-eighths of a quart for 234 miles. J. D. Rourk's Cadillac, the only single-cylinder machine in the run, was debarred from a better position owing to the collapse of a wheel and trouble on the road which caused a greater consumption of fuel than usual. Thirteen of the nineteen successful cars, including the Franklin, were equipped with Diamond tires, all of which completed the run without a single case of puncture or blow-out.

In credit to some of the powerful, speedy cars, it should be pointed out that there were no class divisions whatever, single-cylinder and large six-cylinder touring cars competing on a common basis. This naturally placed the speedy runabout and tourabout class at a disadvantage, a fact which should be borne in mind in examining the table of performances. The deficiencies of the test were realized by the club committee, who sought more to prove the economy of the automobile as a pleasurable means of transportation than to test the all round efficiency of the machines engaged.

Though not a complete comparison, it is still interesting to note the difference in cost between automobile and railroad travel, as exemplified in this run. The journey to Montauk Point and return by rail costs $5.28 each; thus the five passengers on the winning car would have handed over $26.40 for their trip, instead of $3.56. Between 70 and 80 cents, the individual cost on the first half dozen cars, and the railroad charge of $5.28 there is a difference which, though not surprising to the automobilist, will probably astonish the general public. Even the speedy high-powered runabout, with a rate of travel equaling that of an express train, keeps its fuel cost less than half that of the railroad fares.

Obviously, the cost charge is not complete, for there is no allowance for tires, maintenance, and depreciation; adding a substantial percentage for this, however, the automobile still stands out as remarkably efficient on the economic basis.



Frayer-Miller, Franklin and Pullman, Winning Trio.

HOW THE CARS FARED ON FUEL BASIS.

Two hundred and thirty-four miles had to be covered by the contestants within a time limit of eighteen hours. There was no penalization of any kind. Oil and gasoline were supplied in sealed, measured cans, and controlled throughout by official observers. Cost of fuel per head formed the basis of awards. Twenty-three cars started and nineteen qualified by covering the distance in the time limit imposed.

Car	Gasoline gals.	Oil quarts	Total cost	Passengers	Per capita cost
Frayer-Miller	13.000	1 1-4	$3.56	5	$0.71 1-5
Franklin	9.875	2 1-2	3.10	4	77 1-2
Pullman	13.125	2 1-2	3.91	5	78 1-5
*Maxwell	14.937	1	3.98	5	79 3-5
Pope-Hartford	14.000	2 1-8	4.03	5	80 3-5
¶American Mors	21.125	4 3-8	6.44	7	92
Pope-Hartford	14.875	4 1-2	4.85	5	97
†Winton	26.375	7-8	6.82	7	97 3-7
Acme	25.50	2	6.88	7	98 2-7
Thomas Detroit	15.218	4 1-2	4.93	5	98 3-5
Rambler	15.937	3 1-8	5.01	5	1.00 1-5
†Acme	24.875	3 1-2	7.10	7	1.01 3-7
Lozier	27.75	8 1-2	8.07	7	1.15 2-7
Maxwell	22.50	1 1-2	6.00	5	1.20
Cadillac	18.25	9 3-4	6.00	4	1.50
Mora	16.000	8 1-8	5.03	3	1.67 2-3
Studebaker	27.75	6 1-8	8.53	5	1.70 3-5
†Stevens-Duryea	29.50	5 5-8	8.78	5	1.75 3-5
†Acme	30.375	3 3-4	8.53	4	2.13 1-4

*Two-cylinder car. †Six-cylinder car. ¶Limousine.

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FEDERAL AID IN ROAD BUILDING PROBABLE.

When such a far-reaching and powerful organization as the National Grange assumes the aggressive in advocating that the Federal Government should aid the States in the building of roads, then it would seem that the day is near at hand when the construction of highways is to begin in earnest throughout the entire country.

"No argument can be advanced in favor of the annual appropriations by Congress on behalf of river and harbor improvements that does not apply even more strongly to the improvement of our public roads," contends the Grange—one million strong—in resolutions unanimously adopted. Continues the resolving: "We favor the immediate enactment of legislation by Congress making liberal Federal appropriations for the improvement of the public highways of the country, these appropriations to be expended in such manner as Congress may prescribe."

Of course, all automobilists will help the Grange in its efforts to secure Federal aid in this vital building of the roads, and here again comes into play the spreading national growth of the American Automobile Association, the Good Roads Board of which, under the chairmanship of the energetic Hooper, is accomplishing much more than would appear to be the case on the surface. Those who sit in our legislative halls at Washington are becoming aware that automobilists are watchful of measures which concern them, and this keenness of sight will continue until the desired things become realities.

Once upon a time when the cyclists—a hundred thousand strong—talked and argued for good roads from dawn to darkness, some attention was paid to their words, but not enough heed was given to accomplish anything very tangible. The persistent efforts were not wasted entirely, but the man who lives in the country is never as quickly convinced as is the urban dweller, and in this building of the roads the farmer pays his share of the cost only through the results of toil with profits won from the soil by the sweat of his brow. Economy is to him a necessity which teaches the value of every dollar expended, and, though he soon realized the advantages of roads deserving the name, the cost staggered him when the burden seemed to fall heaviest in his direction. But with the coming of substantial State aid he gladly came forward with his share of the money, and while progress in many States has been meager and tedious, the knowledge gained in the work of education is the basis for that unanimous support which is going to "House Bill No. 15,837."

Once National roads are built there must come National supervision in their maintenance, for that has been the experience in those European countries where roads building is rated a science of great worth to the welfare of the nation. We shall quote from a letter that has just come to hand from one of our regular contributors, Francis Miltoun, who is an American with a temporary residence in France, and who has just returned from a tour in Tunis and Algeria. Mr. Miltoun is a student of roads, and this is what he says on the care of National highways after they are built:

"The point I make is that Tunisia, only a quarter of a century old as a civilized country, and Algeria, barely three-quarters of a century old, can make good roads and keep them up efficiently. So can we, *but they must be National roads, under National supervision.* That's my slogan. Did you know that the famous Bath road in England is under the control of sixteen different authorities—from London to Bath—that is why it is good in parts and bad in parts. The Route d'Antibes, from Paris practically to the Italian frontier, is under one administrative control, and that is why it is a good road all the way along. It is this same central control that one finds in Algeria and Tunisia."

* * *

TECHNICAL TRAINING FOR REPAIRMEN.

To say the least, it is unfortunate that more of the men who hang out their shingles to invite the passing autoist who may be in trouble, to cure the ills of his car at their establishments, should not have had the benefit of a prior technical training before embarking in the lucrative practice of learning how to repair automobiles at their owners' expense, not to mention the damage done to the machine itself. It would be far from just to accuse repairmen, as a body, of ignorance, but the number of cases in which the charge is justified is lamentable, as their efforts tend to discredit their better equipped confrères and their misguided tinkering not only fosters the delusion that the automobile is a mechanical mystery, but adds enormously to the annual cost of maintaining a car. Their influence in this direction proves detrimental to the sport of automobiling and many a good car has been utterly condemned by its owner on the prejudiced opinion of an incompetent repairman. A little training would indeed be a most valuable asset.

A. A. A. NATIONAL CONVENTION AT BUFFALO, JULY 6-7

DECISION to hold a National Convention at Buffalo immediately preceding the start of the Annual Tour, the appointment of a European touring representative, election to membership of the West Virginia State Automobile Association and the Automobile Club of Vermont, attention to the legal situation, and discussion of a campaign for increased individual membership was the well-filled program of the directors' meeting of the American Automobile Association, at New York, Tuesday, March 3.

Buffalo will be the scene of a National Convention of the A. A. A. July 6 and 7, the subjects to be discussed being good roads, touring and legislation. As the Fifth Annual A. A. A. Tour will start from Buffalo on July 8, the first convention will certainly be the means of uniting large numbers of automobilists from all parts of the country.

Five State associations have been elected to the A. A. A. since the annual meeting in November, making a total of twenty-one associations now affiliated. Organization work having been completed in Virginia and Kentucky, those States will probably apply for membership at the next meeting.

Chairman Hower announced that he had made arrangements with Victor Breyer, of Paris, France, to become European touring consul for the association for the year 1908. Mr. Breyer, who is well known as the manager of the 1907 Grand Prix, will give free information on touring to all A. A. A. members abroad, assist them to hire cars, engage chauffeurs, and furnish all necessary help in touring abroad.

Chairman Terry, on behalf of the Legislative Committee, asked for the co-operation of State associations and clubs in securing a large delegation on the occasion of the hearing of the Federal Registration Bill before the Judiciary Committee of the House of Representatives, at Washington, March 12. Chairman Terry and his associates are confident of the unanimous approval of the bill by the Judiciary Committee and Congress, and its passage within a few weeks. Among the detail matters discussed was one for an increase of individual members in all States, whether a State association existed or not.

The meeting, which was presided over by President Hotchkiss, was attended by Chairmen Thompson, Hower and Hooper, of the Racing, Touring and Good Roads Boards, the following directors: Lewis R. Speare, Boston; Edward Kneeland, Pittsburg; S. L. Haynes, Springfield; Paul C. Wolff, Pittsburg; Isaac Starr, Jr., Philadelphia; George A. Post, Paterson, N. J.; John P. Coghlin, Worcester, Mass.; Giles H. Stilwell, Syracuse, N. Y.; Treasurer Farrington, and Secretary Elliott. The Pittsburg Automobile Club extended an invitation to hold the next meeting in that city.

TO ATTACK JERSEY LAW IN COURTS.

NEWARK, N. J., March 3.—New Jersey automobilists have abandoned all efforts to obtain a moderation of the proposed Frelinghuysen amendments to the present automobile law and will attack the constitutionality of the latter in the courts on the ground that it is double taxation. In an interview with a representative of the Newark *Call*, Joseph H. Wood, former president of the New Jersey Automobile and Motor Club, said: "Motorists have come to realize that the automobile law question can never be settled satisfactorily until it is settled on fundamentally just principles. For the recognition of these principles we will now fight and there will be no quarter given. The era of compromise is over, so far as Jersey automobilists are concerned."

The New Jersey Automobile Trade Association held an animated meeting at the automobile show at Electric Park on Saturday last to discuss the matter, and a resolution attacking the act was unanimously indorsed. This states that all conferences with the State authorities on the subject are at an end, and in it the association goes on record as being "unqualifiedly and unalterably opposed to the high, prohibitive and inequitable license fees proposed."

H. A. Bonnell, secretary of the New Jersey Automobile and Motor Club, sent out notices yesterday calling a special meeting for Friday for the purpose of discussing the present law and the proposed amendments thereto. The meeting has been called at the request of W. C. Crosby, chairman of the legislative committee, so that the law may be discussed at length and thoroughly understood. A smoker will be held in connection with the meeting.

PRIVATE RACER FOR VANDERBILT CONTEST.

Though all details are at present withheld, Raymond Healy declares that he has just had constructed in this city a powerful racing car intended for the Vanderbilt Cup race and for demonstrating the endurance of an automobile tire in which the owner is interested. The car is declared to develop 90 horsepower and to have shown a speed of 95 miles an hour. Krupp steel has been employed in its construction to a considerable extent, and total weight is said to be under 1,800 pounds. The gasoline tank has a capacity of 25 gallons.

ILLUMINATED PARADE FOR AUTO CARNIVAL.

New York will be a busy automobile center during the week beginning April 6, the six days on which the New York Automobile Trade Association intends to hold carnival in celebration of the tenth anniversary of the introduction of the automobile to the city, and incidentally to foster Spring buying in the metropolitan district.

Arrangements, which are now well in hand, provide for an interesting illuminated parade on the evening of Tuesday, April 7. There will be four sections, devoted respectively to old cars, modern vehicles, private decorated automobiles and commercial cars. In the retrospective section old cars of 1903 or earlier will show in panoramic form the evolution of the automobile from the earliest days. A part of this section will be taken up by racing cars having figured in the more important speed contests of the past. The modern section will comprise the best models of the day.

On Thursday, April 9, there will be a hill climb in some spot near the city, the exact location of which has not yet been decided upon. On Friday, April 10, there will be a daylight parade and a short run to some club or resort, where luncheon will be served. It is the intention of the New York Automobile Trade Association and those independent dealers who have promised their co-operation in the scheme, to keep "open house" during the entire week. Special features will be installed at all the showrooms and each firm will hold a private exhibition.

WHAT THE LAWMAKERS ARE DOING AT ALBANY.

ALBANY, March 3.—The Fowler bill, which would require automobilists to pay a tax of 50 cents per 100 pounds, in addition to their registration fee, was held over by the taxation committee at a hearing to-day, Assemblyman Fowler admitting that there were features which should be changed. The hearing of the Wainwright bill to compel all vehicles using the highways to carry lights at night was put over until March 10. President O. A. Quayle, Attorney M. T. Bender and others of the state automobile association are in conference with a number of the Senators and Assemblymen over the provisions of the proposed bill to revise the present automobile law.

A. A. A. ANNOUNCES LEGISLATIVE AND TOURING BOARDS

AT the last meeting of the Executive Committee of the American Automobile Association, the members appointed to the Legislative Board for the present year were announced. Charles T. Terry, New York, continues as chairman, and this year he will be supported by a much larger board than previously in order that effective work may be done in connection with the passage of the Federal registration bill now pending in Congress. The board is largely composed of representative lawyers who are interested in securing such legislation as will put an end to the confusion and injustice resulting from the working of the present State laws. The Legislative Board is composed of the following:

CALIFORNIA.
G. Allen Hancock, Los Angeles.

COLORADO.
W. H. Bergtold, Denver.

CONNECTICUT.
Walter S. Schutz, Hartford.
James E. Cooper, New Britain.

DELAWARE.
John Bancroft, Wilmington.
Samuel J. Wright, Newark.

DISTRICT OF COLUMBIA.
Robert B. Caverly, Washington.

FLORIDA.
J. B. Parkinson, Daytona.

GEORGIA.
R. J. Davant, Savannah.
M. Felton Hatcher, Macon.

ILLINOIS.
Sidney S. Gorham, Chicago.
George W. Ehrhart, Decatur.
John Farson, Chicago.
William K. Bracken, Bloomington.
Samuel P. Irwin, Bloomington
R. N. Baker, Springfield.

INDIANA.
Fred. M. Ayers, Indianapolis.
Samuel Murdock, LaFayette.
Edgar Apperson, Kokomo.

IOWA.
Dick R. Lane, Davenport.

KENTUCKY.
George H. Wilson, Louisville.

LOUISIANA.
William McL. Fayssoux, New Orleans.

MAINE.
Fred. J. Allen, Sanford.
Frederick Hale, Portland.
Charles T. Libbey, Portland.

MARYLAND.
William C. Devecmon, Cumberland.
Osborne I. Yellott, Baltimore.
Robert H. Carr, Jr., Baltimore.

MASSACHUSETTS.
Francis A. Hurtubis, Jr., Boston.
Samuel L. Powers, Boston.
Robert C. Cooley, Springfield.
W. H. Chase, Leominster.
D. F. Gay, Worcester.

MICHIGAN.
D. M. Ferry, Jr., Detroit.
Fred E. Rowe, Grand Rapids.

MINNESOTA.
F. B. Nelson, Minneapolis.
Lou S. Gillette, Minneapolis.
F. B. Lynch, St. Paul.

MISSOURI.
James Hagerman, Jr., St. Louis.
Walter Brownlee, Brookfield.
George Robertson, Mexico.
Elliott H. Jones, Kansas City.
B. F. Bradenburg, Kansas City.

NEW HAMPSHIRE.
W. D. Veasey, Laconia.

NEW JERSEY.
W. C. Crosby, East Orange.
R. C. Jenkinson, Newark.
J. H. Edwards, Jersey City.
G. A. Post, Paterson.

NEW YORK.
Charles Thaddeus Terry, New York.
W. W. Niles, New York.
Dave H. Morris, New York.
Dr. William P. Richardson, Brooklyn.
John A. Barhite, Rochester.
H. A. Meldrum, Buffalo.
Giles H. Stilwell, Syracuse.

OHIO.
William W. Smith, Jr., Cincinnati.
Paul Staley, Springfield.
C. D. Crites, Lima.
H. L. Vail, Cleveland.

PENNSYLVANIA.
W. C. Sproul, Philadelphia.
George F. Huff, Greensburg.
S. Boyer Davis, Philadelphia.
Frederick A. Godcharles, Milton.
Paul C. Wolff, Pittsburg.
J. Sharp Wilson, Beaver.

RHODE ISLAND.
J. Jerome Hahn, Providence.

SOUTH CAROLINA.
Edward C. Robertson, Columbia.

TEXAS.
W. A. Fraser, Dallas.

VERMONT.
W. D. Woolson, Springfield.

VIRGINIA.
C. B. Richardson, Richmond.
Joseph E. Willard, Richmond.
Frederick Lewis, Norfolk.

WEST VIRGINIA.
X. Poole, Martinsburg.

WISCONSIN.
Neal Brown, Wausau.
James T. Drought, Milwaukee.

MISCELLANEOUS.
J. H. Everest, Oklahoma City, Okla.
D. C. Bradford, Omaha, Neb.

Make-up of the A. A. A. Touring Board for 1908.

The appointments to the Touring Board were also gazetted at the same time. Members appointed to the Touring Board are, with few exceptions, secretaries of their clubs. This has been done in the expectation that their chief function during the present year will be to keep the headquarters of the Touring Board informed as to the condition of roads, the existence of speed traps and concerning local customs in the matter of the enforcement of the law in their various neighborhoods. Such members of the committee as are in the route of the Glidden tour will also be expected to cooperate with the chairman and secretary both before and during the tour. There will be no executive committee of the Touring Board this year. The personnel of the board is as follows:

Frank B. Hower, chairman, Buffalo, N. Y.
Dal H. Lewis, secretary, Buffalo, N. Y.

CALIFORNIA.
Charles B. Hopper, Los Angeles
E. C. Hickman, San Diego.

COLORADO.
Frank I. Ewing, Greeley

CONNECTICUT.
F. T. Staples, Bridgeport.
G. K. Dustin, Hartford.
W. L. Hatch, New Britain.
G. H. Townsend, New Haven.

DISTRICT OF COLUMBIA.
LeRoy Mark, Washington.

FLORIDA.
Herbert P. Race, Jacksonville.
T. E. Fitzgerald, Daytona.

GEORGIA.
Arthur W. Solomon, Savannah.
H. J. Lamar, Jr., Macon.

ILLINOIS.
Joseph F. Gunther, Chicago.
George G. Greenburg, Chicago.
R. A. Whitney, Peoria.
R. N. Baker, Springfield.

INDIANA.
Fred M. Taft, Logansport.
H. A. Brown, Indianapolis.
Horace E. Kizer, South Bend.

IOWA.
A. H. Ruebsam, Davenport.

KENTUCKY.
Charles Chreste, Louisville.

MARYLAND.
D. A. Clark, Baltimore.
Charles M. Danzer, Hagerstown.

MASSACHUSETTS.
F. P. Strout, Springfield.
J. C. Kerrison, Boston.
Edward S. Bryant, Brockton.
F. L. D. Rust, Boston.
F. E. Frost, Worcester.

MICHIGAN.
Paul H. Deming, Detroit.
J. R. Jackson, Grand Rapids.
Edwin S. George, Detroit.
C. A. Flood, Hart.
Charles Haines, Cadillac.
J. C. Hatfield, Kalamazoo.

MINNESOTA.
W. W. Walker, Duluth.
George H. Daggett, Minneapolis.
H. S. Johnson, St. Paul.

MISSOURI.
W. P. Stevens, Kansas City.
S. D. Capen, St. Louis.
M. T. Slane, St. Louis.

NEW JERSEY.
James B. Dill, East Orange.
R. N. Johnston, Atlantic City.
J. Hiscock, Cape May.
W. F. Sadler, Trenton.
George W. Pittenger, Asbury Park.
H. L. Hamersly, Wildwood.

NEW YORK.
Oliver A. Quayle, Albany.
G. W. Bowen, Auburn.
D. H. Lewis, Buffalo.
C. H. Benedict, Schenectady.
Forman Wilkinson, Syracuse.
Robert M. Hunt, Utica.
S. M. Frechie, Binghamton.
F. R. Richardson, Elmira.
C. W. Fairfax, Geneva.
Otis W. Sherman, Poughkeepsie.
Russell A. Field, Brooklyn.
N. L. Bates, Oswego.
J. J. Worrell, New Brighton, S. I.
B. Van Tuyle, Rochester.
I. G. DeCant, Watertown.
A. B. Barkman, Tarrytown.

OHIO.
F. W. Work, Akron.
Harry D. Crane, Cincinnati.
Charles J. Forbes, Jr., Cleveland.
F. T. Cuthbert, Lima.
G. E. Mentel, Springfield.
George L. Fordyce, Youngstown.

PENNSYLVANIA.
Stedman Bent, Philadelphia.
Philip S. Flinn, Pittsburg.
W. O. Davis, Erie.
Jacob D. Rider, Lancaster.
J. Sidney Sible, Harrisburg.
H. C. Harbach, Philadelphia.
Dr. E. C. Wagner, Wilkesbarre.
T. J. O'Neill, Hanover.
Dr. W. R. Stephens, Wilkinsburg.

TEXAS.
Eugene Corley, Dallas.
C. J. Overman, San Antonio.
S. E. Bering, Houston.

VERMONT.
W. W. Brown, Springfield, Vt.
C. C. Warren, Waterbury.
Charles A. Matthews, Rutland.

VIRGINIA.
Otis M. Alfriend, Richmond.
Frederick Lewis, Norfolk.

WEST VIRGINIA.
T. J. Westmyer, Wheeling.
X. Poole, Martinsburg.

WISCONSIN.
Dr. Louis Fuldner, Milwaukee.

The Publications Board and Its Constituents.

Coincident with the announcement of the appointment of the Legislative and Touring Boards, the following were named as members of the Publications Board for the ensuing year:

A. G. Batchelder, chairman, New York City.
John C. Kerrison, Boston, Mass.
Russell A. Field, Brooklyn, N. Y.
John C. Wetmore, New York City.
T. B. Creamer, Philadelphia.
W. F. Thomas, Newark, N. J.
Arthur N. Jervis, New York City.
W. S. Gilbert, Cleveland, O.
C. F. Fitzgerald, Daytona, Fla.
L. C. Boardman, Chicago.
L. P. Baekey, Philadelphia.
G. A. Wahlgreen, Denver, Col.
R. R. L'Hommedieu, San Francisco.

AERO GORDON-BENNETT STARTS OCTOBER 11.

BERLIN, Feb. 27.—The date of the Aero Gordon-Bennett has now been definitely fixed upon for October 11. This is a Sunday. On the day preceding, Saturday, two other races will take place, open only to members of the German Airship Association, which has the arrangement of the chief event.

ORMOND-DAYTONA RACES IN FULL SWING

By JOHN C. WETMORE

ORMOND, Fla., March 1.—Though the past glories of the Ormond-Daytona beach meets so far as big fields and multitudes of spectators will not be received this year at the present writing at noon on Sunday, indications point to a limited but high class array of starters with a probable minimum of six in each of the four long-distance races carded for the week. At least the Automobile Club of America can claim the credit of not letting the annual tournament go by the boards, and by hard hustling having gathered a sextette of racers likely to put up on the smooth beach new records for all distances of 100 miles and over.

The array of fast ones already on hand is noteworthy. Walter Christie has his Big Bear, with a 35-second mile record on Atlantic City beach; and the 60-horsepower Christie he drove in the last Vanderbilt Cup race. E. B. Blakeley will pilot the former and Christie himself will drive the latter. Emanuel Cedrino is here with the Fiat Cyclone, built on Grand Prix lines, and Maurice Bernin with a new 60-horsepower Renault Frères.

A new racing enthusiast, R. W. Buckley, of Brooklyn, shies his caster into the arena at this meet. He bought the 120-horsepower B. L. M., completed too late for the last Vanderbilt Cup trials, and will drive it in the big race and the invitation contest. He will also enter and drive his 70-horsepower Thomas runabout in the stock car race. The 120-horsepower Vanderbilt Hotchkiss, to be driven by F. B. Shaft, is en route, as is also a 60-horsepower Haynes, to be piloted by R. G. Kelsey. The former is nominated by Harry Levey, of New York, the cleansing magnate. This about completes the list of probable starters or those likely to figure prominently in the big race. Other candidates for stock car, Minneapolis Cup, and invitation race honors are a 60-horsepower Benz, entered by Louis Bergdol, of Philadelphia, which G. P. Parker will pilot; James Loughlin, 3rd's 30-horsepower Cleveland; Joseph W. Gilbert's 30-horsepower Packard, and a Franklin, entered by Mr. Stimson, of Jacksonville.

Ormond never put up a balmier line of weather than the present; but—alas!—the condition of the beach is most disappointing. Between Ormond and Daytona there are so many soft spots of red sand that it is probable that none of the races, except perhaps the stock car contest, will be run over this end of the beach. South of Daytona, however, the beach is fairly good and likely to admit of new long-distance records by the very fast bunch of contenders at hand. It is likely that a 12 1-2-mile stretch will be laid out and the races run in 25-mile circuits of 300, 150 and 100 miles.

The races will be conducted by Chairman Robert Lee Morrell, A. L. Riker, A. R. Whiting and S. B. Stevens; all but the latter are already here. They will be assisted by F. J. Wagner, as starter; George L. Weiss and Lieut. P. A. Sayles, as timers; and Secretary S. A. Butler, as indispensable man of all work.

Among the other racing enthusiasts here for the meet are: Mr. and Mrs. Joseph M. Gilbert, Mrs. A. L. Riker, Mrs. Buckley, Mr. and Mrs. A. W. Church, E. R. Hollander, N. Lazarnick, W. A. Adriance, E. A. Percy, E. C. J. McShane, Harlan W. Whipple, A. R. Hawley, R. A. Field, Mr. and Mrs. W. H. Harrison, F. Ed. Spooner, and W. A. Rutz. The hotel is crowded with a big overflow in the cottages in the grove.

FEW STARTERS IN OPENING DAYS' EVENTS

ORMOND, Fla., March 3.—No record was broken when Emanuel Cedrino, in the Fiat *Cyclone*, captured the Minneapolis Cup on the opening day of the sixth annual speed carnival. The light track racer recently imported from Italy covered the hundred miles in 1:50:20, running the last sixty miles on three tires and a rim. The record made in 1906 by Clifford Earp on a Napier is 34:40 better.

To the disappointment of the large crowd of spectators, but three cars lined up for the start of the 100-mile race: Blakely, on W. Gould Brokaw's 130-horsepower front drive Christie; Shefts, in Harry Levey's 120-horsepower Hotchkiss; and Cedrino in the Fiat. The start was made at the twelve-mile post in front of the clubhouse at Daytona, and was run over a twelve and a half-mile stretch.

The Hotchkiss got away first, but was soon passed by the Fiat, and before the French car had gone a mile its chances had been lost by a long delay caused by clutch trouble. The Christie had difficulty with its automatic inlet valves, after covering ten miles, and ceased to figure in the contest. The Fiat lost time through a front tire pulling off the rim on two different occasions, the mishap allowing the Hotchkiss to creep up to within five miles of the Italian. At the 50-mile mark, however, the Fiat had a substantial lead, its time being 64:05, compared with 1:17:51 for the Hotchkiss. The French car later withdrew, leaving the Italian alone for an uninteresting finish. The Fiat carried off the special prize of $100 offered by the Continental Caoutchouc Company for the fastest car fitted with their tires and racing rims.

Though faster time was made by the German Benz, winner of the 150-mile stock chassis race, the afternoon event was no more interesting than that of the morning. Louis J. Bergdol, on the 80-horsepower Benz, covered the first 25 miles in 25:15, being then ahead of the morning time; the 50-mile mark was passed at 61:02; 125 miles at 2:10:38, and the winning post at 2:40:53.

The four starters were W. Gould Brokaw's Allen-Kingston, James Laughlin's Cleveland, a Thomas Flyer, driven by J. Carey, and L. J. Bergdol's Benz. The only withdrawal was the Haynes, which had previously broken its crankshaft. A good start gave the Benz a lead, which it easily maintained to the end. At the twenty-five-mile mark the Thomas was second and the Cleveland third. The Allen-Kingston retired early with burned-out bearings. Summary for first day:

100-Mile Race for Minneapolis Cup.—Won by Cedrino, 80-horsepower Fiat "Cyclone"; time, 25 miles, 26:39 4-5; 50 miles, 60:05; 75 miles, 85:06; finish, 1:50:20.

150-Mile Stock Chassis Race.—Won by Bergdol, 80-horsepower Benz; time, 25 miles, 25:15; 50 miles, 61:02; 75 miles, 85:32; 100 miles, 1:47:31; 125 miles, 2:10:38; finish, 2:40:53.

Benz Victory Feature of Second Day's Racing.

ORMOND, Fla., March 4.—Over a vastly improved beach, Louis J. Bergdol, driving an 80-horsepower Benz, to-day won the 125-mile invitation amateur race in 1:53:30 2-5, cutting his new record figure of yesterday. S. B. Stevens, in the Fiat *Cyclone*, was second, covering 95 miles in 1:54:28, after losing 29 minutes waiting at Daytona for a new rocker arm to be brought from Ormond. Stevens led with 41:37 for 50 miles and 50:18 for 70 miles, at which point he was four miles ahead of the German car. R. G. Kelsey, who was third, was last timed at 50 miles in 1:05:46. The race was run over a 50-mile course at the Daytona end of the beach.

Escorting Italian Through Snowdrifts Into Chicago.

WORLD TOURISTS PROTEST AND SQUABBLE.

Dissensions have arisen among the group of men trying to cover the 20,000 miles between New York and Paris by automobile. The two foreigners forming the rear guard complain that they are being badly treated along the road, and the crews of the two leading cars have put in a protest against the only American, declaring that it was rebuilt at Buffalo and had received help in the run through snowbound Indiana. Thomas emphatically denies the charges.

The crew of the De Dion car, *Le Matin's* official automobile, have quarreled among themselves. Captain Hansen, a Norwegian explorer selected by the De Dion Company to pilot the car, was unable to agree with Saint-Chaffray, the *Matin* delegate, and quit at Chicago. The rupture is not surprising, for at the start in New York there was little harmony between the *Matin* official and the drivers of the French cars.

Captain Hansen has now made arrangements with the E. R. Thomas Company to take their car through to Paris. He will probably join the car when it reaches Cheyenne, Wyo., at which spot Roberts will turn it over to some other driver. It had at first been intended to send the Thomas car as far as San Francisco only; now, however, that Hansen has been secured, it will be sent by train from Cheyenne to Seattle on March 5, in company with the foreigners, its equipment completed, and driven through Alaska and Siberia to Paris. The prospects of the American car reaching Paris have been enormously increased by this move, for Captain Hansen is the only man who has had actual experience in Arctic regions, and was selected by the De Dion Company as the most capable man Europe could provide.

How the De Dion Team Looked on Reaching Chicago.

Thomas, De Dion and Zust have left Chicago and are now on the second leg of the journey, struggling with Iowa mud. The Thomas is leading, the De Dion and Zust keeping as close together as possible over one hundred miles in the rear. The German Protos and French Motobloc have also formed an alliance, and will probably set out from Chicago together after a brief rest and overhauling of their machines. It is not likely, however, that they will continue far, for, according to an agreement, all cars must be put on the railroad on March 5 in order to arrive at Seattle in time to catch the last boat to Valdez, Alaska. Many who are familiar with conditions in the Northern regions believe that even with this saving of time it will be impossible to get through Alaska before the thaw transforms the country into a huge bog and makes travel impossible. It is to avoid such a hold-up that the cars are to be rushed ahead on the railroad instead of continuing across country under their own power.

The mileage of the different cars from the thirteenth day to date is as follows:

Car Country	14th Day	15th Day	16th Day	17th Day	18th Day	19th Day	20th Day	21st Day
Thomas (America)	1043	1043	1043	1118	1227	1297	1395	1502
De Dion (France.....	987	1043	1043	1043	1117	1212	1263	1263
Zust (Italy)	987	1043	1043	1043	1117	1212	1263	1369
Protos (Germany)	912	932	949	963	981	993	993	993
Motobloc (France)	895	921	949	963	981	985	993	1043

Not Snowbound—Only Rushing Studebaker Through to Kansas.

STUDEBAKER ACCOMPLISHES WAR MISSION.

Starting out from New York six days after the New York-Paris tourists, the Studebaker army car passed the leaders in the round-the-world run before Chicago and presented its dispatch to the Governor of Fort Leavenworth, Kansas, Tuesday, March 3. The 1,500-mile run which had been undertaken to prove the value of the automobile as a factor in military operations, was beset with enormous difficulties owing to the wretched condition of the roads and the heavy snowdrifts encountered for a considerable portion of the distance. Relays of drivers were employed, the men being sent ahead by train to await the car's arrival; in this way the machine was kept running twenty-four hours a day.

Studebaker-Pullman Run to Savannah.

PHILADELPHIA, March 3.—With Robert Morton and Frank Yeager at the wheels, a Pullman and a Studebaker left this city this morning for an endurance run to Savannah, Ga., on a wager of $1,000, which will be awarded to the driver first reporting to the Savannah Motor Club. The run is being held under the auspices of the Quaker City Motor Club, Dr. J. E. Overeck and G. W. Daley being the official observers. The route is via Reading, Harrisburg, Gettysburg, Washington, Richmond, Portsmouth, Danville and Columbia.

MARCH DOINGS OF THE AUTOMOBILE CLUBS

BANQUET OF THE A. C. OF PHILADELPHIA.

PHILADELPHIA, March 2.—Upwards of one hundred members and guests gathered in the huge banquet hall of the Manufacturers' Club last Friday evening on the occasion of the annual dinner of the Automobile Club of Philadelphia. Many out-of-town guests of prominence were present, and the tenor of the addresses was so hopeful for better things for the automobilists that all hands voted the symposium the most successful and enthusiastic ever held under the club's auspices.

The various elements now quietly at work for the improvement of the roads between Washington and New York—all had representatives present, and the reports of the work already accomplished were evidently gratifying to those assembled about the board.

Robert P. Hooper, chairman of the Good Roads Board of the A. A. A. and vice-president of the Pennsylvania Motor Federation, urged the concentration of all local clubs and individual automobilists upon the matters of good roads, better laws and signboards. He urged all automobilists to prod their representatives at Washington to do all in their power to aid the passage of the Federal Registration bill, now pending in Congress, and upon which a hearing will be given next week.

In the unavoidable absence of Mayor Reyburn, his Director of Public Safety, Henry Clay, was on hand to say a word of welcome to the visitors and outline the city's attitude toward automobilists.

Colgate Hoyt, president of the Automobile Club of America, spoke of the great advance in automobile construction, and instanced the recent Long Island economy test, where the winning car carried its passengers over 242 miles of road at a cost per head for fuel and oil of but 71 1-2 cents, whereas a round trip railroad ticket costs $5.38.

In the capacity of toastmaster, Secretary S. Boyer Davis made many hits. He thought the Automobile Club of Philadelphia deserved credit for its good roads and signboard work and its membership of over 525, and predicted twelve months hence a total on the rolls which would make a membership of one thousand a possibility before the completion of the following year.

MARYLAND OFFERS AUTO CORPS TO ARMY.

BALTIMORE, MD., March 5.—Developing the original idea of the Quaker City Automobile Club to endow the nation with Volunteer Motor Corps as part of the militia, the Automobile Club of Maryland has forwarded resolutions to the President of the United States, Congress and the General Assembly of Maryland.

The value of the automobile as an auxiliary in military operations having already been fully demonstrated, the Maryland club recommends to the Congress of the United States that it provide by appropriate act or acts of Congress for the organization, arming, and disciplining of Volunteer Motor Corps as part of the regularly organized militia of the several States. The club offers to both Federal and State governments the service of so many of its members and their automobiles as may be necessary for the organization of a Volunteer Motor Corps in the home State in the event of the adoption of the resolution.

In case the recommendation is not adopted, and the proposed corps is precluded from becoming a branch of the State militia, the club offers to form a volunteer corps and place it at the services of the city of Baltimore and the United States government in all cases of need or necessity.

TOLEDO CLUB TAKES AN ACTIVE ROLE.

TOLEDO, O., Feb. 10.—While Ohio is one of the later States to develop an active participation in the good roads movement, much work has been accomplished there within the past year. The most recent addition to the good roads army in the Buckeye State is the newly-organized Automobile Club of Toledo, which has leased quarters in the new Hotel Secor, and has gone at its work in an aggressive manner, plainly indicating that it will be a potent factor.

The club is made up of men who are identified with the various professional and business interests of the city, and an important factor in the promise of success that this club shows can be found in the officers elected to guide affairs.

E. D. Libbey, the president, is well-known as a manufacturer of cut glass, and also as the exploiter of bottle-blowing machinery that has revolutionized that industry. He is an intensely enthusiastic autoist and every summer tours through Europe. He is prominently identified with the social,

E. D. Libbey, President. E. J. Marshall, Vice-President. A. L. Spitzer, Secretary. J. M. Steenberg, Treasurer.

business, and club life of Toledo, and among his many interests is that of president of the Toledo Museum of Art. E. J. Marshall, the vice-president, is a prominent corporation lawyer, identified with the automobile industry, and is himself an enthusiastic automobilist. A. L. Spitzer, the secretary, is a member of Spitzer & Company, bankers, of Toledo and New York, and has been a good roads advocate for years. J. M. Steenberg, treasurer, has been foremost among local autoing devotees ever since the rise of the sport.

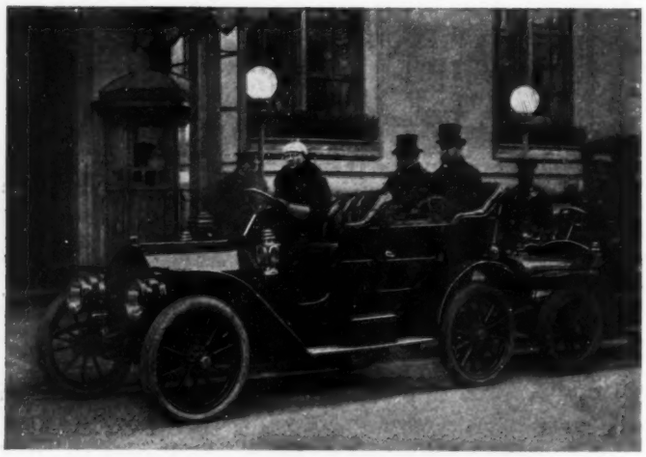
These men, with John J. Manning, Marshall Sheppey, W. W. Morrison, John N. Mockett, and F. M. Brigham, constitute the board of governors. The club anticipates building an up-river clubhouse and already steps have been taken to put the roads around the Maumee and Perrysburg belt drive in perfect condition for automobiling.

TWO ACTIVE VIRGINIA AUTOMOBILE CLUBS.

RICHMOND, VA., March 2.—The Richmond Automobile Club was organized in October and has about seventy members. There are about 200 autos owned in Richmond. The officers of the club are: President, Dr. R. Angus Nichols; vice-president, John B. Swartwout; secretary-treasurer, Otis M. Alfriend. The club hopes to join the A. A. A. in the near future. At present they are working to secure the passage of a bill before the Legislature, which will give State aid in roads building. The club also plans to have some local races and endurance runs.

There are a number of accessible places within a radius of twenty miles of Richmond, but no extended trips can be made with comfort because of the poor highways.

The Valley Motor Club, of Virginia, has headquarters at Staunton, Va. The officers are: President, M. C. Watts; vice-president, C. S. Hunter; secretary, E. R. Armentrant; treasurer, Frank T. Holt.



Governor Hughes Utilizes the Premier.

New York's governor appreciates the value of the automobile as a means of keeping numerous engagements in an evening, and is shown here on the occasion of a lecture trip in the metropolis.

SUCCESS OF ROCHESTER AUTO SHOW ASSURED.

ROCHESTER, N. Y., March 2.—Every space is taken for the first annual Rochester automobile show to be held March 18-21 inclusive. Owing to the large number of applications for space since the last were sold the management is making arrangements for additional space, which will be in the foyer and basement. Every inch of space on the main floor is taken up with automobiles, while the large platform built for the accessories in the balcony is crowded to its limit, all the committee rooms are being used for exhibiting purposes. The New Convention Hall, where the show is to be held, is rapidly nearing completion and will be in readiness for the opening night, which will be the official opening of the building. The entire fifteen dealers in automobiles in the city will show, as will the two manufacturers, the Gearless and the Selden. The accessories, motor boats and motorcycles will all be shown by local dealers, making it an entirely local show. Great plans are being laid for the decorations, which will be a leading feature of the exhibition. It will be a color scheme of green and white, with an electrical display of nearly 15,000 lights arranged for decorative purposes. The Fifty-fourth Regiment band will furnish music.

INDIANAPOLIS SHOW WEEK OF MARCH 23.

INDIANAPOLIS, Feb. 24.—At a meeting of the Automobile Show Committee, held at the Denison Hotel last Wednesday night, it was decided to postpone the automobile show for one week, the new dates beginning March 23.

After considerable discussion it was decided to make the change so that the show and the annual conclave of Scottish Rite Masons could be held at the same time, insuring a larger attendance.

The hill climb will be held on the morning of March 24 on Michigan Hill, which is the steepest and most dangerous hill in the vicinity, if proper arrangements can be made. A silver loving cup will be presented to the winner of each of the following events: Cars listed at $1,000 and under; cars listed from $1,000 to $1,800; cars listed from $1,800 to $2,750; cars listed from $2,750 to $3,500, and for cars listed above $3,500. There will be a parade of the contestants.

APPERSON WINS PASADENA HILL CLIMB.

LOS ANGELES, CAL., Feb. 29.—Remarkable time was made to-day in the feature event of the annual Pasadena-Altadena hill climb by the Apperson Jackrabbit which speeded up the 1 4-10-mile incline at the rate of 52.4 miles per hour, defeating such high-class competitors as the Stearns, Franklin, Packard, Pope-Toledo and Haynes. The grade is said to be 11 per cent., and the Apperson had 18 seconds to spare over its nearest competitor. Winners in the other events were the Thomas Flyer, Oldsmobile, Pope-Hartford, Kisselkar and Tourist.

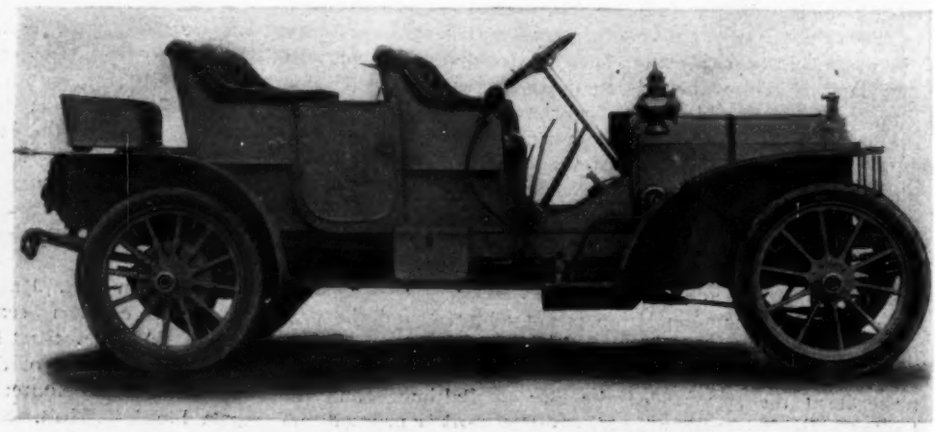
RECEIVER FOR MERCEDES, BACKED BY MORSE.

Temporary receivers have been appointed for the Mercedes Import Company, a wholesale automobile concern with offices and salesrooms at 590 Fifth avenue, and Charles W. Morse as its financial backer. Recently C. L. Charley, sole selling agent for the German Mercedes Company, became uneasy about the condition of the company and sent his brother from Paris to investigate. The largest creditors are C. L. Charley, $43,800; Charles W. Morse, $25,000; National Bank of North America, $55,479; R. E. Fulton, $6,300. The total liabilities are $115,104, and the nominal assets $146,978.

NEW PACKARD "CLOSE-COUPLED" BODY.

Owing to the varying accommodations required by different purchasers of a car, the selection of types of bodies has been a difficult problem for the maker. Many owners exact from a car, greater carrying capacity than was provided for in its design and this has been the case particularly with runabouts, out of which has grown the odd-looking roadster type with two seats on the extreme rear. Appreciating the demand that exists for a four-passenger car, the owner of which usually drives himself, while the chauffeur is carried in the rear, the Packard Motor Car Company, Detroit, Mich., has just brought out the "close-coupled" body shown in the accompanying photograph. This body is mounted on the regular Packard "Thirty" chassis and has been especially designed for the purposes in view, providing comfortable seats for all four passengers, as contrasted to the runabout on which the rumble is far from comfortable.

In this new design, the passengers are carried midway between the front and rear axles, so that their weight is well distributed on all four springs, and a variation in the load is not so perceptible. It is a particularly safe and capable car for fast driving over rough roads, as the distribution of the weight is such as to give the maximum efficiency under all conditions. The rear end of the body provides storage space for touring paraphernalia. With the new body, the Packard "Thirty" lists at $4,300, or $100 more than the regulation touring type.



Attractive Lines of the New "Close-Coupled" Packard.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

Springfield, Mass., is to have a combination automobile hose and chemical wagon, and when it goes into service, the city will have no less than five automobile fire wagons, the others being two "flying squadrons," a chief's and deputy chief's car.

Josef Hoffman, the well-known pianist, has bloomed forth as the inventor of an ingenious road indicating device, which has been patented in Germany and upon which patents are now being applied for in this country, through his attorneys, Howson & Howson, New York.

J. D. Lamb, president of the Inland Auto Company, Walla Walla, Wash., and L. H. Thoen, one of the company's representatives, are at present on a tour through their Washington and Idaho territory and report excellent prospects for the season. The concern handles the Franklin line.

Since the new Rambler models were placed on the market in November last, 1,379 cars have been sold, the makers announcing that their December sales exceeded by $23,900 those of the same month in any previous year, while January showed an increase of $18,148 of the same kind, something strongly indicates the generally healthy condition of the auto business.

Fire Chief Lally, of the Brooklyn fire department, is enthusiastic over the service given by the Stolp Shock Eliminator on his Locomobile which has now been equipped with the device for several months. He reports that it has given satisfactory service and has required no repairs or adjustments, and that its use effects a great saving in wear and tear on the machine.

With thirteen bidders for the privilege of supplying the city of Camden, N. J., with a runabout for the use of Chief Hollinsworth, of the Bureau of Water, for inspection purposes, the contract was awarded to the Mitchell car. The Philadelphia agents, the Penn Motor Car Company, aver that there is nothing in the silly superstition regarding the unluckiness of the number 13.

Owing to the great increase in their business during the past year, the Autolight & Motor Supply Company, 506-508 North Broad street, Philadelphia, has had to add to its facilities and has just completed a large addition to its building at the above address. This company carries one of the largest and most varied stocks of automobile supplies and accessories and issues an attractive catalogue.

A. P. Fleming, secretary of the Automobile Club of Southern California, has just taken delivery of a new roadster type of Durocar with inclosed body, this being the first 1908 model built in Los Angeles to be completed. It is the product of the Durocar Company, and was built specially to Mr. Fleming's order. Though intended principally for city use, the car has a speed of forty miles an hour and will be used for tours as well.

It has been suggested to Alexander Winton that he rehabilitate the *Bullet No. 2* and enter it in the speed contests of the coming summer. One of the enthusiasts making the suggestion declared that no racing machine had appeared since its manufacture in 1903 that looked faster or more trustworthy. Earl Kiser, now Winton branch manager in Pittsburg, hopes Mr. Winton will decide to start the *Bullet* once more, for the champion steersman is keen for fresh contests on the track or road.

The New York branch of the White Company has recently sold an ambulance to the Kings County hospital of Brooklyn. The ambulance consists of a standard 30-horsepower chassis with a body similar to those of the ambulances furnished by the White Company to the United States War Department and Navy Department. The suitability of the White for ambulance work has been highly commended by the Quartermaster-General in a formal report on the subject to the Secretary of War.

American methods of automobile manufacture are soon to be tested by the Royal Automobile Club of Great Britain, the technical committee of which will select three single-cylinder Cadillac cars from the London agents' stock. These cars will be dismantled and their parts mixed indiscriminately. The committee will then single out the pieces into three separate piles and the company's mechanics will rebuild the cars from them, without altering any of them, and with nothing but spanners as tools. Upon being reassembled, the three cars are to be run 500 miles on the Brooklands track.

The latest move on the part of an accessory manufacturer to "automobile row" has been that of the Witherbee Igniter Company, located for the past three years at 541 West Forty-third street, New York, soon to be installed in new quarters on the third floor of the Motor Mart, 1876 Broadway. In its new location the company will have more than 8,000 square feet of floor place, thus affording more room for the manufacture and display of Wico ignition specialties. The general offices and salesroom face Broadway, while the factory and charging room occupy the remainder of the space. A. J. Fisk, general manager of the company, is now on an extended trip through the West, establishing a complete chain of branches. A. B. Elliott, the company's vice-president, promises a unique house-warming as soon as the new quarters are ready.

RECENT TRADE REMOVALS.

The Supplementary Spiral Spring Company, of St. Louis, manufacturer of the "Spring of Fame" supplementary springs, has removed its New York office from 52 West Sixty-seventh street to the Motor Mart, 1876 Broadway. M. H. Cormack, formerly vice-president of the Standard Brake Company, is in charge of the office, and his territory includes the States of New York and New Jersey.

NEW AGENCIES ESTABLISHED.

The Schacht Manufacturing Company, Cincinnati, O., have just opened an agency at 1402 Michigan avenue, Chicago. It is in charge of Walter S. Crain, who has long been identified with the automobile industry. A full line of the Invincible Schacht runabouts will be shown.

Following up the aggressive agency campaign upon which he has been busily engaged for some time past, Paul Lacroix has just announced the placing of a Boston agency for the Renault cars. The new representatives at the Hub are A. Cutler Morse & Company, located in the Motor Mart, Park Square, Boston, Mass.

Agencies for the friction-driven Cartercar are being closed all over the country, some of those who have taken on this line within the last few weeks, being as follows: Smith, Clemens & Hopping, Dayton, O.; Knowles & Roland, Demming, N. M.; Parker & Heugabaugh, Ashtabula, O.; Indianapolis Auto Company, Indianapolis, Ind.; Naperville Garage, Naperville, Ill., and Johnson's Auto Company, Boone, Ia.

PERSONAL TRADE MENTION.

Lewis C. Block, of the Ford, Buffalo (N. Y.) branch, has succeeded F. C. Vanderhoof as manager of the Philadelphia branch of that company. The later has accepted the management of the Bergdoll Motor Company, of Philadelphia. The Philadelphia branch will shortly be moved nearer to the center of activity on "Gasoline Row," the change only awaiting the completion of a new building now being erected at Broad and Vine streets.

L. J. Sackett, a pioneer auto salesman, has just joined the Matheson forces as special representative and at present is at the Matheson plant at Wilkesbarre, Pa. Mr. Sackett is probably one of the best qualified salesmen in the field, as he has not only had a number of years' experience and is known from coast to coast, but he has also had considerable experience and education in the practical end of automobile building, so that he can run and repair cars as well as sell them.

NEW TRADE PUBLICATIONS.

Something of interest on the subject of tire construction is to be found in the publication of the Dow Tire Company, 104 West Forty-second street, New York City, makers of the Dow non-deflation tubes. Colored illustrations reveal the construction of the tire and methods of production.

Of particular interest in the catalogue of the Anderson Forge and Machine Company, Detroit, Mich., is the section devoted to vanadium steels and the tables showing results of tests made. Drop forgings, which form the main feature of the company's output, are also dealt with somewhat extensively.

Small in size, but complete in information, is the characteristic of the booklet dealing with the improved models of Stewart speedometers, produced by the Stewart & Clark Manufacturing Co., of Chicago. The salient features of the Stewart are well presented between the red covers of the little booklet.

In the Reliable-Dayton 1908 catalogue details are given on what is claimed to be the "first real successor to the horse." Four models, three of them of the buggyabout type and one a delivery wagon, are produced by the Reliable Dayton Motor Car Company, Chicago, and their main features are set forth in the catalogue.

Those interested in what an automobile can do with the bonnet sealed down hard and fast will find something to please them in a small brochure from the Mora Motor Car Company, of Newark, N. Y. Press comments on what was probably the most extensive sealed bonnet contest ever run off constitutes the main portion of the booklet.

INFORMATION FOR AUTO USERS

"Oilzum" Carbonless Oil.—Under this title, the White & Bagley Company, Worcester, Mass., are manufacturing a special brand of cylinder oil, particularly refined for gas engine use. It is intended as a lubricant for the piston, wrist pin and main bearings, and its

"OILZUM" SPECIAL CYLINDER OIL.

makers claim that it will keep the cylinder head and piston rings free from carbon for the longest period of steady service. The same concern is also placing on the market a special automobile

"CLEANZUM" DIRT REMOVING COMPOUND.

soap known as "Cleanzum Antiseptic Hand Cleaner" which will instantly remove oil and grime from the hands without injury to the skin. They will show a full line of their products at the coming show in Boston next week.

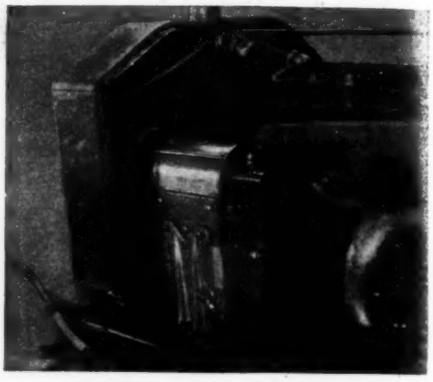
Smith Taximeters.—S. Smith & Sons, Ltd., 9 Strand, London, Eng., the well-known English makers of the Smith Speed Indicators, have just placed a new taximeter on the market. It has been in constant use by the London municipal authorities for the past three months and has also passed the Scotland Yard test successfully, besides receiving a certificate from the observatory at Kew for accuracy. The instrument is 8 inches high, 7 inches wide and 5 inches deep. It is operated on the well-known horo-metric system, i.e., showing the amount of fare according to the time occupied or distance traveled, the dial indicating total fare and extras. The Smith taximeter is of extremely simple construction and although substantially made throughout weighs but 15 pounds. The clock movement is of the two-day type and is of S. Smith & Sons make. The usual flag is provided to show when the vehicle is at liberty, and by means of a lock for which the driver carries the key the instrument may be made proof against tampering by the mischievous small boy. The wheel attachment is very simple, an arm actuated once at every turn of the wheel pulling a wire concealed in a flexible shaft and moving the driving wheel of the taximeter one tooth. This causes the working to be very slow, with a consequent absence of wear. The Smith taximeters are being placed on the American market by the firm's branch house, located at 116 Broad street, New York.

"Wisconsin" Tire Protector.—One bad feature of many tire protectors is the constant tendency to loosen that they exhibit in service. This is a feature that has been given special attention in the "Wisconsin" tire protector, which is being manufactured and marketed by the Tire Protector Company, Stevens Point, Wis. The general construction of the protector will be plain from the

ATTACHMENT WISCONSIN TIRE PROTECTOR.

accompanying illustration, the method in which the defect in question is overcome consisting of the use of six loops in the continuous circular wire to which the hub connections are attached, as shown. The wire is hard steel and the tendency of the loops is to spring back straight, which causes them to exert a tightening effect upon the protective cover, drawing it closer to the tire. The base of the protector is made of rubber and fabric, while the tread is of the best chrome leather studded with rivets upon which the wear comes. This construction prevents the stretching and bagginess that is inevitable with protective covers made of leather alone, while any slackness from wear and service is automatically taken up by the steel wire ring already mentioned, and to which the protector is laced all the way round. As an instance of the durability of this rubber and leather combination, it may be mentioned that one set has been run more than 4,000 miles in the past 18 months and is still in excellent condition. During that time the tires were never punctured.

K-W Special Magneto.—In order to meet the constantly increasing demand for a magneto within the reach of owners of small cars, the K-W Ignition Company, 3



K-W SPECIAL MAGNETO ON FORD.

Power avenue, Cleveland, O., have just brought out a new magneto, known as Model F, which has been designed especially for use on the four-cylinder Ford runabouts, but which can be used on any automobile. The accompanying illustration shows the manner of installing it on a Ford, a substantial bracket being furnished by the makers for this purpose, the magneto being mounted by attaching this bracket to the frame of the car. It is equipped with a pulley for driving from the flywheel by means of a one-inch belt, and to avoid trouble from the use of the common article the makers will supply a non-stretching, waterproof belt at a cost of $1. The K-W magneto has been wound especially for use in connection with the coils employed on the Ford cars and a large number of them have been sold for installation on the latter.

The Crane Puller.—Nothing so emphasizes the value of a tool as the number of uses to which it may be put in case of emergency, and this is something for which

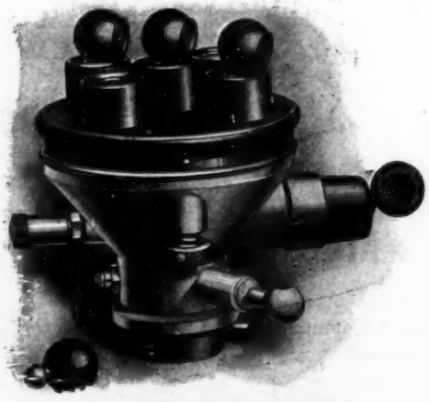
ONE METHOD OF USING CRANE PULLER.

the Crane puller, made by Crane Puller, 53 State street, Boston, is specially designed. It may be used as a jack, for removing

sprockets and wheels and for many uses in the repair shop, such as removing a flywheel, or as an arbor press, while many other uses will suggest themselves to the ingenious amateur or repairer. These tools are made in several sizes, the No. 2, provided with two sets of arms, long and short, being especially designed for the use of the autoist. The beam is 10 inches long, and the long arms are 9 inches long in the clear, while the short arms serve to pull off anything under a length of 6 inches. The total weight of the tool is 12 pounds and it is guaranteed to stand a strain of six tons.

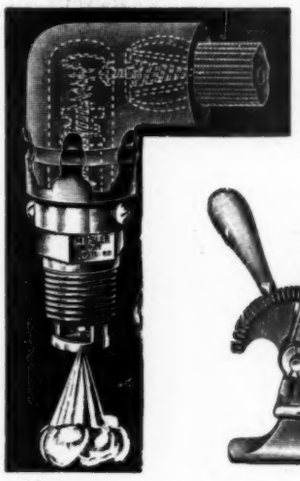
Herz Tandem Pump.—The constantly increasing size of automobile tires has made the task of pumping them by hand burdensome, and a number of tire pumps have been placed on the market, but the average autoist prefers not to have a pump permanently installed on the car. To avoid this objection, Herz & Company, 203-205 Lafayette street, New York, are placing on the market a hand lever flywheel-friction type of pump known as the "Tandem." It is adapted to "knock down" for packing in the tool box, and for use merely has to be held against the frame of the car and pressed against the revolving flywheel. The same concern also makes the well-known "B.B.," which is a double piston type designed to be attached to the frame and driven by gear, chain or belt. The Herz distributer is another of their specialties that has been on the market for several years. In this, the primary contact is of the press type, and occurs between two hardened tool-steel pins, pressed against each other by a revolving hardened steel cam plate. The secondary current enters the center of the removable cover and is distributed by a metal segment to the four or six plugs. An extra quality hard rubber cover is employed, and is kept in place by the Herz patented spring nuts.

TANDEM PUMP.



VIEW OF HERZ DISTRIBUTER.

Marine Spark Plug Protectors.—All motor boat owners who have suffered the petty annoyance caused by water reaching the spark plug will appreciate the protector produced by A. R. Mosler & Company of 163 West Twenty-ninth street, New York City. As will be seen by accompanying illustration the protector consists of a heavy, porcelain hood, screwed on to cable and securely held by spring socket. While making a hermatically sealed connection, the hood is easily removed.



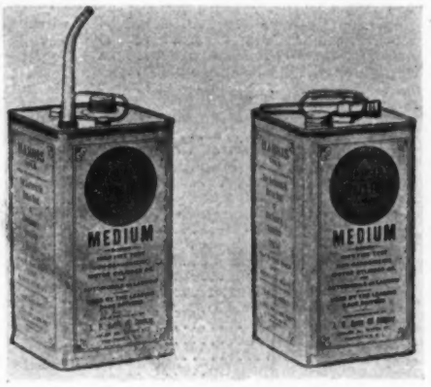
PLUG COVER.

MOSLER CONTROLS.

The same firm has recently placed on the market a new distributer for operating multiple cylinder engines with a single vibrator coil. One of its most valuable features is a patent separable case allowing immediate access to primary contacts without removing wires. At the same time the primaries are absolutely water and dust-proof. The secondary terminals are carried by hard rubber casing and heavy plate glass. Mosler self-clamp controlling and cut-out levers for use on automobiles and motor boats are a simple and reliable attachment made with either single or double levers and built for either horizontal or vertical control.

MOSLER SINGLE-CYLINDER DISTRIBUTER.

New Harris Spout Cans.—While nothing can be of greater importance than the provision of proper lubricating oil for the automobile motor, the necessity of having it in a suitable container for the convenience of the user is a matter of no little import to the autoist. The A. W. Harris Oil Company, Providence, R. I., realizing this, brought out a new line of cans this year and the favorable reception with which they have met shows conclusively that the manufacturers' efforts in this direction have been appreciated. The Harris one-gallon can is a decorated package bearing the word "Light," "Medium" or "Heavy," designating the grade of oil, and is equipped with an extension spout, which is held on top during transit. This spout is easily applied and at once transforms the gallon receptacle into a practical oil can with which almost any aperture can be reached. The Harris five-gallon can is similarly decorated and equipped, the extension spout permitting the can to be tipped so that the oil may easily be poured into any other receptacle. Two five-gallon cans are packed in a wooden case.



HARRIS CAN WITH EXTENSION SPOUT.

HARRIS FIVE-GALLON SPOUT CANS.

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